

IITGN Guest House Management System (GHMS)

Assignment 4: Deploying the DBMS

Team: First Order

Gaurav Shah - 21110064

Soham Rahatal - 21110173

Pratik Agarwal - 21110166

Rohit Srivastav - 21110180

Banavath Diraj Naik - 22110044

Sohitha Sonalika - 22110151

Shivamani - 22110062

3.1 Responsibility of G1:

1.1 Initial Feedback

From the initial feedback by M. Yashwant Chouhan from the Guesthouse, we have added the following functionalities to our WebApp:

- I. Added changes to the Travel Request Management part of the admin dashboard. In the first version of the web app, when a travel request is raised by the hospitality staff or the current guest, it gets displayed as an unassigned request on the ‘Travel Request’ page of the hospitality_staff dashboard until the driver is not assigned. Then, one of the admin users assigns the request to one of the drivers by looking at his/her records and the pending requests. This version showed the drivers on the available list even when another pending request was assigned at the exact pick-up time and date. We have fixed this by updating the SQL query, initially fetching the list of available drivers by fetching the drivers that don’t have a pending request ± 6 hours to the given request.

```
driver_available = []
for drivers in driver_all:
    pending_requests =
travel_request.query.filter(travel_request.driver_license ==
drivers.driver_license, travel_request.date_of_travel >=
request.date_of_travel).all()
    l = len(pending_requests)
    i = 0
    for pending_request in pending_requests:
        if pending_request.date_of_travel == request.date_of_travel and
abs(request.pick_up_time.hour - request.pick_up_time.hour) < 6:
            print(pending_request)
            break
        i += 1
    if i == l:
        driver_available.append(drivers)
print(driver_available)
```

Before:

Home Check In Check Out Travel Request Maintenance Request Reservations Billing Feedback Logout

Travel request submitted successfully!

[See Completed Travel Requests](#)

Unassigned Travel Requests

Request ID	Travellers	Date	Pick-Up Time	Destination	Purpose	Action
2	3	2024-04-13	20:10:00	amd	lk	Assign Driver
5	4	2024-04-13	20:10:00	amd	djfn	Assign Driver

Create a Travel Request

Number of Travellers

Date of Travel dd-mm-yyyy

Pick-up Time --:--

Destination

Travel Purpose

[Submit](#)

Home Check In Check Out Travel Request Maintenance Request Reservations Billing Feedback Logout

Assign the Travel Requests

ID	First Name	Last Name	Age	Description	Phone	Passenger Count	Driver Count	Action
1	Wallache	Banks	44	ipsum integer a nibh in	162-481-4708	20	1	Assign
10	Lulita	Ivakin	45	ac consequat metus sapien ut nunc	786-377-9813	16	0	Assign
2	Grete	Wellstood	43	est congue elementum in hac	407-461-7141	20	0	Assign
3	Margeaux	Pickerin	34	orci vehicula condimentum curabitur in	708-902-9848	5	0	Assign
4	Hermie	Linnell	33	sit amet sem fusce consequat nulla nisl	806-807-0327	10	0	Assign
5	Esdras	Haughey	41	suspendisse potenti in eleifend quam a odio	769-426-4394	8	0	Assign
6	Dionne	Buckler	30	maecenas tincidunt lacus at velit vivamus vel	746-553-5883	2	0	Assign
7	Shawn	MacQueen	34	mi in porttitor pede justo	212-241-8743	16	0	Assign
8	Florri	Loghan	49	eleifend luctus ultricies eu nibh quisque id justo	159-798-3345	10	0	Assign
9	Lizabeth	Player	50	in sagittis dui vel nisl duis ac nibh	309-339-4694	11	0	Assign

[Go Back](#)

Home Check In Check Out Travel Request Maintenance Request Reservations Billing Feedback Logout

Maintenance request assigned successfully to driver 9 !

[See Completed Travel Requests](#)

Unassigned Travel Requests

Request ID	Travellers	Date	Pick-Up Time	Destination	Purpose	Action
5	4	2024-04-13	20:10:00	amd	djfjn	Assign Driver

Create a Travel Request

Number of Travellers

Date of Travel dd-mm-yyyy

Pick-up Time ::--

Destination

Travel Purpose

Home Check In Check Out Travel Request Maintenance Request Reservations Billing Feedback Logout

Assign the Travel Requests

ID	Name	Surname	Age	Description	Request ID	Start Date	End Date	Driver ID	Action
1	Wallache	Banks	44	ipsum integer a nibh in	162-481-4708	20	1	0	Assign
10	Lulita	Ivakin	45	ac consequat metus sapien ut nunc	786-377-9813	16	0	0	Assign
2	Grete	Wellstood	43	est congue elementum in hac	407-461-7141	20	0	0	Assign
3	Margeaux	Pickerin	34	orci vehicula condimentum curabitur in	708-902-9848	5	0	0	Assign
4	Hermie	Linnell	33	sit amet sem fusce consequat nulla nisl	806-807-0327	10	0	0	Assign
5	Esdras	Haughey	41	suspendisse potenti in eleifend quam a odio	769-426-4394	8	0	0	Assign
6	Dionne	Buckler	30	maecenas tincidunt lacus at velit vivamus vel	746-553-5883	2	0	0	Assign
7	Shawn	MacQueen	34	mi in porttitor pede justo	212-241-8743	16	0	0	Assign
8	Florri	Loghan	49	eleifend luctus ultricies eu nibh quisque id justo	159-798-3345	10	0	0	Assign
9	Lizabeth	Player	50	in sagittis dui vel nisl duis ac nibh	309-339-4694	11	0	0	Assign

[Go Back](#)

Home Check In Check Out Travel Request Maintenance Request Reservations Billing Feedback Logout

Maintenance request assigned successfully to driver 9 !

[See Completed Travel Requests](#)

Unassigned Travel Requests

No unassigned travel requests.

Create a Travel Request

Number of Travellers

Date of Travel dd-mm-yyyy

Pick-up Time ::--

Destination

Travel Purpose

Both travel requests get assigned to driver 9.

After:

Home Check In Check Out Travel Request Maintenance Request Reservations Room Availability Billing Feedback Logout

Travel request submitted successfully!

[See Completed Travel Requests](#)

Unassigned Travel Requests

Request ID	Travellers	Date	Pick-Up Time	Destination	Purpose	Action
8	2	2024-04-14	14:00:00	amd	airport	Assign Driver
9	2	2024-04-14	16:00:00	amd	airport	Assign Driver

Create a Travel Request

Number of Travellers

Date of Travel
 dd-mm-yyyy

Pick-up Time
 - : - :

Destination

Travel Purpose

Home Check In Check Out Travel Request Maintenance Request Reservations Room Availability Billing Feedback Logout

Assign the Travel Requests

Driver License	First Name	Last Name	Age	Car Description	Phone Number	Experience	Pending Requests	Action
10	Lulita	Ivakin	45	ac consequat metus sapien ut nunc	786-377-9813	16	0	Assign
2	Grete	Wellstood	43	est congue elementum in hac	407-461-7141	20	0	Assign
3	Margeaux	Pickerin	34	orci vehicula condimentum curabitur in	708-902-9848	5	0	Assign
4	Hermie	Linnell	33	sit amet sem fusce consequat nulla nisl	806-807-0327	10	0	Assign
5	Esdras	Haughey	41	suspendisse potenti in eleifend quam a odio	769-426-4394	8	0	Assign
6	Dionne	Buckler	30	maecenas tincidunt lacus at velit vivamus vel	746-553-5883	2	0	Assign
7	Shawn	MacQueen	34	mi in porttitor pede justo	212-241-8743	16	0	Assign

[Go Back](#)

Home Check In Check Out Travel Request Maintenance Request Reservations Room Availability Billing Feedback Logout

Maintenance request assigned successfully to driver 10 !

[See Completed Travel Requests](#)

Unassigned Travel Requests

Request ID	Travellers	Date	Pick-Up Time	Destination	Purpose	Action
9	2	2024-04-14	16:00:00	amc	airport	<button>Assign Driver</button>

Create a Travel Request

Number of Travellers

Date of Travel dd-mm-yyyy

Pick-up Time ::--

Destination

Travel Purpose

Home Check In Check Out Travel Request Maintenance Request Reservations Room Availability Billing Feedback Logout

Assign the Travel Requests

Driver License	First Name	Last Name	Age	Car Description	Phone Number	Experience	Pending Requests	Action
2	Grete	Wellstoed	43	est congue elementum in hac	407-461-7141	20	0	<button>Assign</button>
3	Margeaux	Pickerin	34	orci vehicula condimentum curabitur in	708-902-9848	5	0	<button>Assign</button>
4	Hermie	Linnell	33	sit amet sem fusce consequat nulla nisl	806-807-0327	10	0	<button>Assign</button>
5	Esdras	Haughey	41	suspendisse potenti in eleifend quam a odio	769-426-4394	8	0	<button>Assign</button>
6	Dionne	Buckler	30	maecenas tincidunt lacus at velit vivamus vel	746-553-5883	2	0	<button>Assign</button>
7	Shawn	MacQueen	34	mi in porttitor pede justo	212-241-8743	16	0	<button>Assign</button>

[Go Back](#)

Home Check In Check Out Travel Request Maintenance Request Reservations Room Availability Billing Feedback Logout

Maintenance request assigned successfully to driver 2 !

[See Completed Travel Requests](#)

Unassigned Travel Requests

No unassigned travel requests.

Create a Travel Request

Number of Travellers

Date of Travel dd-mm-yyyy

Pick-up Time ::--

Destination

Travel Purpose

As the first request is assigned to driver 10, and the second request's pick-up time is within one hour of the first request, driver 10 is not on the list of available drivers on the driver assignment page. Therefore, driver two is selected.

II. We have also added a new webpage called ‘Room Availability’ in the hospitality_staff dashboard, enabling the staff to check the room availability of the rooms in the guesthouse. This will help the staff not to underbook or overbook reservations. Staff can enter a date on which he/she wants to see the room availability and then will be redirected to a new page where they can see the number of rooms available by type. They can’t see exactly which room (by its number) is available as the room assignment is done at check-in and not while reserving.

Implemented by creating new routes in admin.py, writing the necessary SQL queries, and creating the necessary HTML pages.

Before:

The screenshot shows a web-based application interface for a guesthouse management system. At the top, there is a navigation bar with links: Home, Check In, Check Out, Travel Request, Maintenance Request, Reservations, Billing, Feedback, and Logout. Below the navigation bar, a welcome message "Welcome, Suzanne!" is displayed. Underneath it, a section titled "Occupied Rooms" contains a table listing room details. The table has columns for Room Number, Guest ID, Guest's First Name, Guest's Last Name, Phone no, and Email. The data in the table is as follows:

Room Number	Guest ID	Guest's First Name	Guest's Last Name	Phone no	Email
None	101	we,five	scvb	abcd	askjcb@adjf.com
None	102	asdikh	asfldk	5323412342	asdijk@gmail.com
None	103	asdfkj	sdfj	1349021021	dsflkh@gmail.com
None	104	dfmd slf	sdln	1231241312	sdkfn@gmail.com
100	1	Carmelita	Peasey	619-670-1965	guest1@gmail.com
100	4	Dyana	Biggadike	315-576-0286	guest4@gmail.com
100	81	Yovonnda	Kingcott	254-779-9959	None
101	94	Jobi	Dulinty	423-697-5032	None
109	21	Olivier	Joselovitch	763-247-0436	None
110	23	Goldarina	McMenamin	530-401-3909	None
112	34	Tudor	McGirl	515-573-6701	None
120	7	Portia	Freethe	850-710-7673	guest7@gmail.com
123	8	Goddard	Reddington	253-677-7768	guest8@gmail.com
127	98	Danica	Jone	316-347-8248	None
131	30	Julie	Grote	865-142-9507	None
132	45	Conan	Stanfield	719-828-1793	None
136	27	Janna	Aslett	763-821-1512	None

Below the occupied rooms section, there is a heading "Assigned Open Maintenance Requests" followed by a single item: "Check-Out Room Cleaning".

There is no page called “Room Availability” in the initial version.

After:

Home Check In Check Out Travel Request Maintenance Request Reservations Room Availability Billing Feedback Logout

Welcome, Suzanne!

Occupied Rooms

Room Number	Guest ID	Guest's First Name	Guest's Last Name	Phone no	Email
184	28	Rutherford	Tomkies	559-408-1299	None
189	26	Gweny	Pedro	619-973-9025	None
194	5	Gaby	Dommin	240-580-9248	guest5@gmail.com
194	43	Nadia	Aishford	212-795-4847	None
204	6	Tally	Charopen	312-296-2463	guest6@gmail.com
204	59	Meyer	Pendered	419-790-6207	None
204	66	Algernon	Druery	502-718-9534	None
208	65	Mariissa	Radnedge	814-664-9618	None
208	69	Lucky	Millott	915-182-4875	None
211	88	Randene	Robbings	516-443-8178	None
233	25	Georgette	Coffey	423-542-1376	None
235	95	Blondy	Reuther	434-556-2012	None
236	92	Calla	Hazard	770-603-2400	None
237	51	Elianore	Gayter	540-755-1437	None
242	29	Elianora	Macieja	713-931-9692	None
244	87	Gregoor	McDowall	212-199-8244	None
246	48	Marline	Philson	954-826-5033	None
248	42	Darlene	Fonda	761-261-0086	None

Assigned Open Maintenance Requests

Check-Out Room Cleaning

Home Check In Check Out Travel Request Maintenance Request Reservations Room Availability Billing Feedback Logout

Check Room Availability:

Enter the date below:

Home Check In Check Out Travel Request Maintenance Request Reservations Room Availability Billing Feedback Logout

Check Room Availability:

Enter the date below:

April, 2024 ▾

Su	Mo	Tu	We	Th	Fr	Sa
31	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	1	2	3	4
5	6	7	8	9	10	11

[Clear](#) [Today](#)

Room Availability on date: 2024-04-15

Room Type	Specially Enabled	Room Count
Double Bed	True	58
Double Bed	False	58
Twin Bed	True	80
Twin Bed	False	59
Suite	True	70
Suite	False	72

Room availability by date can now be seen as above. Therefore, the staff can check whether the requested rooms are available when making a new reservation.

- III.** There wasn't a feedback form page in the current_guest dashboard for adding feedback. This has been corrected to allow current guests to write about their stay and the submitted feedback can be seen in the hospitality_staff dashboard.

Before:

Current Guest Dashboard

Welcome, Carmelita

Your WiFi Password is : pE8TiKVj=oUXMF

Unassigned Travel Requests

No unassigned travel requests.

No assigned travel requests.

Hospitality Staff Dashboard

Feedbacks

Sort by:

Date (Ascending)

Sort

ID	Date	Rating	Feedback

The current guests can't give their feedback, so the entries in the "Feedback" page in the hospitality staff's dashboard are NULL.

After:

Current Guest Dashboard

Home Travel Request Maintenance Request Show Bills Change Password Write Feedback Logout

Login successful!

Welcome, Carmelita

Your Wifi Password is : pE8TIKVj=oUXMF

Unassigned Travel Requests

No unassigned travel requests.

No assigned travel requests.

Home Check In Check Out Travel Request Maintenance Request Reservations Room Availability Billing Feedback Logout

Give Feedback for your stay!

Rate your experience:

Star Rating
5

Feedback
Great rooms! 

Submit

Hospitality Staff Dashboard

Home Check In Check Out Travel Request Maintenance Request Reservations Room Availability Billing Feedback Logout

Login successful!

Welcome, Suzanne!

Occupied Rooms

Room Number	Guest ID	Guest's First Name	Guest's Last Name	Phone no	Email
None	101	we,fwe	scvb	abcd	askjcb@adjf.com
None	102	asdikh	asfldk	5323412342	asdijk@gmail.com
None	103	asdfkj	sdfjl	1349021021	dsflkh@gmail.com
None	104	dfmd slf	sdln	1231241312	sdkfn@gmail.com
100	1	Carmelita	Peasey	619-670-1965	guest1@gmail.com
100	4	Dyana	Biggadike	315-576-0286	guest4@gmail.com
100	81	Yovonna	Kingcott	254-779-9959	None
101	94	Jobi	Dulinty	423-697-5032	None
109	21	Olivier	Joselovitch	763-247-0436	None
110	23	Goldarina	McMenamin	530-401-3909	None
112	34	Tudor	McGirl	515-573-6701	None
120	7	Portia	Freeth	850-710-7673	guest7@gmail.com
123	8	Goddard	Reddington	253-677-7768	guest8@gmail.com
127	98	Danica	Jone	316-347-8248	None
131	30	Julie	Grote	865-142-9507	None
132	45	Conan	Stanfield	719-828-1793	None
136	27	Janna	Aslett	763-821-1512	None

Assigned Open Maintenance Requests

Home Check In Check Out Travel Request Maintenance Request Reservations Room Availability Billing Feedback Logout

Feedbacks

Sort by:
Date (Ascending)

Sort

ID	Date	Rating	Feedback
1	2024-04-14 5	5	Great rooms!

Guests can give feedback from their dashboards, and the hospitality staff can see them from their dashboards.

1.2 Final Feedback

As per the final feedback by Mr. Yashwant Chouhan, we have added the following new features to our database:

I. *Reservation Confirmation for requests made by IITGN members*

Initially, when the IITGN Members filled out the reservation form from their dashboards, a new reservation was directly created without the approval from the hospitality staff team. To tackle this issue, we have created a new column in the reservation table in the database called ‘confirmed’ using the query:

```
alter table reservation add column confirmed bool;
```

which will help us track the confirmation status of the reservations.

Now, when an IITGN Member creates a reservation, a new reservation does get added to the reservation table, but confirmed = FALSE until the hospitality staff approves the reservation. Also, if a reservation is not confirmed and the check-in date exceeds today, it automatically gets deleted from the reservation table.

The reservation made by hospitality staff automatically has confirmed = TRUE

Before:

Reservation form in IITGN Member Dashboard

Home Make a Reservation Logout

Make a Reservation

[Make a Reservation](#)

Email ID
guest10@gmail.com

Number of People
1

Check-in Date
14-04-2024

Check-out Date
15-04-2024

Room Type
double bed

Specially Enabled Room Required

Comments

Reservation directly gets made without confirmation

Home Make a Reservation Logout

Booking successful! Reservation ID: 69

Make a Reservation

[Make a Reservation](#)

Reservation page in Hospitality Staff's dashboard

All Reservations						
40	2	2023-11-03	2024-02-14	Double Bed	True	posuere cubilia curae duis faucibus iacus at velit vivamus vel nulla eget eros dis parturient montes nascetur ridiculus mus etiam nam tristique tortor ipsum primis in ac tellus semper interdum mauris laoreet ut rhoncus aliquet pulvinar sed nulla eget eros elementum pellentesque justo maecenas rhoncus aliquam augue vel accumsan tellus nisi eu orci mauris iacus purus aliquet at sfasf
41	1	2023-11-25	2023-09-24	Twin Bed	True	none
42	1	2023-07-28	2023-11-29	Double Bed	True	df
43	4	2024-02-03	2024-04-08	Double Bed	True	asdsd
44	1	2023-12-25	2023-03-08	Suite	True	
45	3	2023-09-09	2023-08-14	Suite	False	
46	4	2023-06-07	2023-06-20	Double Bed	False	
47	3	2023-02-15	2023-11-30	Twin Bed	True	
48	2	2023-12-06	2023-12-16	Twin Bed	True	
49	3	2023-09-13	2023-03-08	Twin Bed	False	
50	4	2024-01-22	2023-12-13	Double Bed	True	
53	2	2024-04-06	2024-04-08	Suite	True	
54	2	2024-04-06	2024-04-08	Suite	True	
55	1	2024-04-06	2024-04-24	Suite	True	
56	2	2024-04-08	2024-04-17	Suite	True	
57	1	2024-04-09	2024-04-08	Suite	True	
58	2	2024-04-09	2024-04-25	Suite	True	
59	1	2024-04-09	2024-04-10	single	False	ground floor
60	2	2024-04-09	2024-04-11	single	False	jkb
61	1	2024-04-12	2024-04-18	single	False	
62	1	2024-04-14	2024-04-14	double bed	True	
63	1	2024-04-14	2024-04-15	double bed	True	
64	1	2024-04-14	2024-04-14	double bed	True	
65	1	2024-04-14	2024-04-15	double bed	True	
67	1	2024-04-14	2024-04-14	double bed	True	
68	1	2024-04-14	2024-04-14	double bed	True	
69	1	2024-04-14	2024-04-15	double bed	True	

After:

Reservation form in IITGN Member Dashboard

Home Make a Reservation Logout

Make a Reservation

[Make a Reservation](#)

Email ID
guest11@gmail.com

Number of People
1

Check-in Date
14 - 04 - 2024

Check-out Date
16 - 04 - 2024

Room Type
double bed

Specially Enabled Room Required

Comments

On submission, this creates a reservation request

Home Make a Reservation Logout

Booking Request made successfully! Reservation ID: 69

Make a Reservation

[Make a Reservation](#)

Home page in IITGN Member Dashboard

Home Make a Reservation Logout

Your Reservations

Confirmed

No confirmed reservations

Unconfirmed

ID	People	Check-in Date	Check-out Date	Room Type	Special	Room	Comments
69	1	2024-04-14	2024-04-16	double bed		True	

Reservation page in Hospitality Staff Dashboard

Home Check In Check Out Travel Request Maintenance Request Reservations Room Availability Billing Feedback Logout

Reservations

[See all reservations](#)

Unconfirmed Reservation by IITGN Members

Reservation ID	IITGN ID	Email ID	Number of People	Check In Date	Check Out Date	Room Type	Enabled Room	Comments	Confirm
69	1	guest11@gmail.com	1	2024-04-14	2024-04-16	double bed	True		<input type="button" value="Confirm"/>

[Make a Reservation](#)

After clicking on confirm button

The screenshot shows a web-based dashboard with a dark header bar containing links: Home, Check In, Check Out, Travel Request, Maintenance Request, Reservations, Room Availability, Billing, Feedback, and Logout. Below the header is a green success message box containing the text "Reservation confirmed successfully!". The main content area is titled "Reservations" and includes a link "See all reservations". A section titled "Unconfirmed Reservation by IITGN Members" displays the message "No unconfirmed reservations". At the bottom is a black button labeled "Make a Reservation".

Home page in IITGN Member Dashboard after reservation confirmation

The screenshot shows a web-based dashboard with a dark header bar containing links: Home, Make a Reservation, and Logout. Below the header is a green success message box containing the text "Login successful!". The main content area is titled "Your Reservations" and includes a section titled "Confirmed" which lists one reservation: ID 69, People 1, Check-in Date 2024-04-14, Check-out Date 2024-04-16, Room double bed, Type True, Special Requirements, and Comments. Below this is a section titled "Unconfirmed" which displays the message "No unconfirmed reservations".

II. Room cleaning maintenance request during check-out

When a guest checks out, his/her room must be cleaned before it can be assigned to another guest during check-in. Therefore, we have implemented this as follows:

1. When a current guest checks out, a new maintenance request is created: "CHECK-OUT: Cleaning in room {room_no}."
2. A new entry is added to an existing table, 'requires_maintenance,' with request_id and room_no.
3. This maintenance request is assigned to a housekeeping staff following the same procedure as before, but now we have added a new page to the housekeeping staff dashboard called "Room Cleaning." This will help to keep track of check-out cleaning and other maintenance requests easily.
4. Until the room cleaning request is closed by the housekeeping staff to whom it was assigned, the room is not shown in the list of available rooms during the check-in.

Before:

Home Check In Check Out Travel Request Maintenance Request Reservations Billing Feedback Logout

Check-out's Today:

Guest ID	Room Number	First Name	Last Name	Phone Number	Email ID
108	133	afkj	djf	2323508092	dncbsd@gmail.com

Check-out:

Guest ID

Home Check In Check Out Travel Request Maintenance Request Reservations Billing Feedback Logout

Guest checked out successfully!

Check-out's Today:

No check-out's today.

Check-out:

Guest ID

Home Check In Check Out Travel Request Maintenance Request Reservations Billing Feedback Logout

Check-In

Today's Reservations

Reservation ID	IIT Gandhinagar ID	Check-Out Date	Email	Number of People	Room Type	Specially Abled Room Needed	Actions
68	31	2024-04-14	sdfjlb@gmail.com	1	double bed	True	<input type="button" value="Add Guest"/>

The room checked-out on the same day visible as available room for check-in

Home Check In Check Out Travel Request Maintenance Request Reservations Billing Feedback Logout

Assign Room

Select Room from the following available rooms:

Room Number	Room Type	Specially Enabled	Intercom Number	Assign Room
double bed	True		133	<input type="button" value="Assign"/>
double bed	True		134	<input type="button" value="Assign"/>
double bed	True		147	<input type="button" value="Assign"/>
double bed	True		158	<input type="button" value="Assign"/>
double bed	True		166	<input type="button" value="Assign"/>
double bed	True		172	<input type="button" value="Assign"/>
double bed	True		176	<input type="button" value="Assign"/>

Home Check In Check Out Travel Request Maintenance Request Reservations Billing Feedback Logout

Checked In! Successful Assignment of guest_id [108] to room 133. WiFi Password: sVgBtAiA

Check-In

Today's Reservations

No reservations for today.

After:

Home Check In Check Out Travel Request Maintenance Request Reservations Room Availability Billing Feedback Logout

Check-out's Today:

Guest ID	Room Number	First Name	Last Name	Phone Number	Email ID
106	112	asfjk	skjb	1230493290	dajkfb@gmail.com

Check-out:

Guest ID

Home Check In Check Out Travel Request Maintenance Request Reservations Room Availability Billing Feedback Logout

Guest checked out successfully!

Check-out's Today:

No check-out's today.

Check-out:

Guest ID

Room cleaning maintenance request created automatically

Home Check In Check Out Travel Request Maintenance Request Reservations Room Availability Billing Feedback Logout

Maintenance Requests

[See Closed Maintenance Requests](#)

Umassigned Open Maintenance Requests

Request ID	Description	Date Created	Time Created	Action
62	CHECK-OUT: Cleaning in room 112	2024-04-14	16:19:32	<input type="button" value="Choose Staff"/>

No other unassigned open maintenance requests.

Create a Maintenance Request

Description

Maintenance request assigned successfully to housekeeping staff 10 !

Maintenance Requests

[See Closed Maintenance Requests](#)

Uassigned Open Maintenance Requests

All Check-Out room cleaning finished. Please come back after a check-out.

No other unassigned open maintenance requests.

Create a Maintenance Request

Description
<input type="text"/>
<input type="button" value="Submit"/>

432	85	Jeramie	Dunkley	561-746-7236	None
433	77	Carmelle	Arderne	570-402-5280	None
438	80	Sharia	Kocher	713-270-1966	None
442	82	Quinton	McBoyle	901-276-3592	None
443	19	Gypsy	Klawi	940-285-7457	None
444	93	Muff	Halstead	360-588-3544	None
450	70	Leona	Luther	585-654-2060	None
452	78	Drew	Tipping	414-601-3946	None
456	86	Reynolds	Murford	602-371-9239	None
461	24	Kinny	Cowap	360-797-9514	None
482	38	Giffer	Carabet	716-113-5126	None
487	17	Murynn	Parlor	952-199-6158	None
488	11	Ilise	Sheeran	309-922-5427	
488	58	Dolinda	Onder	800-884-7838	None

Assigned Open Maintenance Requests

Check-Out Room Cleaning

Request ID	Description	Date created	Housekeeping Staff ID	Status
62	CHECK-OUT: Cleaning in room 112	2024-04-14	10	open

Other Maintenance Requests

Request ID	Description	Date when created	Housekeeping Staff ID	Status
53	new	2024-04-05	2	open
54	new2	2024-04-05	6	open
59	cleaning required in lobby	2024-04-09	4	open
60	abcd	2024-04-09	1	open

Check-In

Today's Reservations

Reservation ID	IIT Gandhinagar ID	Check-Out Date	Email	Number of People	Room Type	Specially Abled Room Needed	Actions
65	1	2024-04-15	safdjn@gmail.com	1	double bed	True	<input type="button" value="Add Guest"/>

Room 112, which was checked out, is not visible in the check-in room assignment, as the maintenance request hasn't been closed .

Home Check In Check Out Travel Request Maintenance Request Reservations Room Availability Billing Feedback Logout

Guest 1 added successfully! Guest ID: 106

Assign Room

Select Room from the following available rooms:

Room Number	Room Type	Specially Enabled	Intercom Number	Assign Room
double bed	True		130	<button>Assign</button>
double bed	True		133	<button>Assign</button>
double bed	True		134	<button>Assign</button>
double bed	True		147	<button>Assign</button>
double bed	True		158	<button>Assign</button>
double bed	True		166	<button>Assign</button>
double bed	True		172	<button>Assign</button>

Home Check In Check Out Travel Request Maintenance Request Reservations Room Availability Billing Feedback Logout

Checked In! Successful Assignment of guest_id [106] to room 130. WiFi Password: Og77zxXF

Check-In

Today's Reservations

No reservations for today.

Housekeeping Staff Dashboard

Home Room Cleaning Other Requests Logout

Login successful!

Welcome to the Guesthouse Management System

Please click on Room Cleaning and Other Requests to View/Close the requests

Home Room Cleaning Other Requests Logout

Check Out Cleaning

Request ID	Date Created	Time Created	Request Description	Actions
62	2024-04-14	16:19:32	CHECK-OUT: Cleaning in room 112	<button>Close</button>

Go Back

Home Room Cleaning Other Requests Logout

Maintenance request closed successfully!

Check Out Cleaning

No check-out cleaning requests assigned yet.

Go Back

2. User Views and Privileges in the database

A. Hospitality Staff Dashboard (Admin) :

The screenshot shows a web browser window titled "Guesthouse Management System" with the URL "127.0.0.1:5000/hospitality_staff_dashboard". The page displays a "Login successful!" message and the heading "Landed on hospitality_staff dashboard!". Below this, there is a section titled "Occupied Rooms" containing a table with guest information:

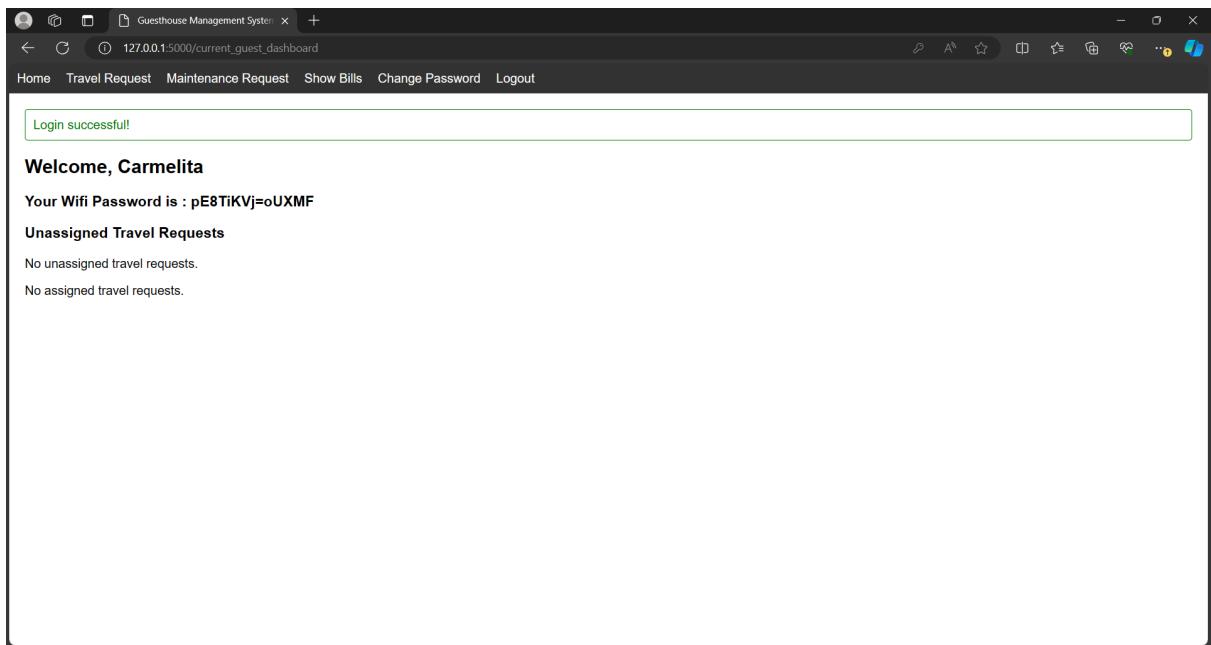
Room Number	Guest ID	Guest's First Name	Guest's Last Name	Phone no	Email
None	101	Cathy	Green	8979808934	cathy@gmail.com
None	102	efjleqn	dflmn	0932409192	asefn@gmail.com
None	103	akife	alsjfb	982349823	asklf@gmail.com
None	104	afdkn	lmdfn	972032322	fkjnsdf@gmail.com
None	105	fjk	lkfn	1343321232	lejf@gmail.com
None	106	efkejnf	adlm	3254253212	effj@gmail.com
None	108	eqfgejb	afjn	1398733412	asfmk@gmail.com
None	109	wflkwef	wefn	1248911238	QLKRN@gmail.com
None	110	dijnf	sdfjk	239583421	sdjf@gmail.com
None	111	kwjdb	adkb	9879732123	QLKRN@gmail.com
None	112	efmk	kf	923823241	qwjn@adf.com
None	113	Frankenstein's	Monster	0101010100	Pennsylvania@monters.inc
100	1	Carmelita	Peasey	619-670-1965	guest1@gmail.com
100	4	Dyana	Biggadike	315-576-0286	guest4@gmail.com
100	81	Yovonnda	Kingcott	254-779-9959	None
101	94	Jobi	Dulinity	423-697-5032	None
105	107	feqlkfn	sdlmfn	9450924321	adlm@gmail.com

Below this, there is a section titled "Assigned Open Maintenance Requests" with a table:

Request ID	Description	Date when created	Housekeeping Staff ID	Status
20	Quibus utrumque bellum compone interdum	2022-02-12	0	open

- This hospitality staff dashboard is the home page and we can see the options shown above are:
 - Check-in: This navigates to the page that shows that day's reservations.
 - Check-out: This navigates to the page that shows that day's check-outs and check-out billings.
 - Travel request: This navigates to the page that shows completed and unassigned travel requests.
 - Maintenance request: This navigates to the page that shows open and closed maintenance requests.
 - Reservations: This navigates to the page that shows all the reservations.
 - Billing: This navigates to the page where we can create or generate a Bill.
 - Feedback: This navigates to the page that shows all the feedbacks.
 - Logout: This can be used to logout from the current account.

B. Current Guest Dashboard:



- This current guest dashboard is the home page of the current guest. We can see the options shown above are:
 - Travel request: This navigates to the page where the guest can make a travel request.
 - Maintenance request: This navigates to the page where the guest can make a maintenance request.
 - Show bills: This navigates to the page that shows all the bills
 - Change password: This navigates to the page where the user can change password.
 - Logout: This can be used to logout from the current account.

C. IITGN Member Dashboard:

The screenshot shows a web browser window titled "Guesthouse Management System" with the URL "127.0.0.1:5000/iitgn_member_dashboard". The page displays a green success message "Login successful!". Below it, a section titled "Your Reservations" lists one reservation entry:

ID	People	Check-in Date	Check-out Date	Room Type	Special Room Required	Comments
58	2	2024-04-09	2024-04-25	Suite	True	

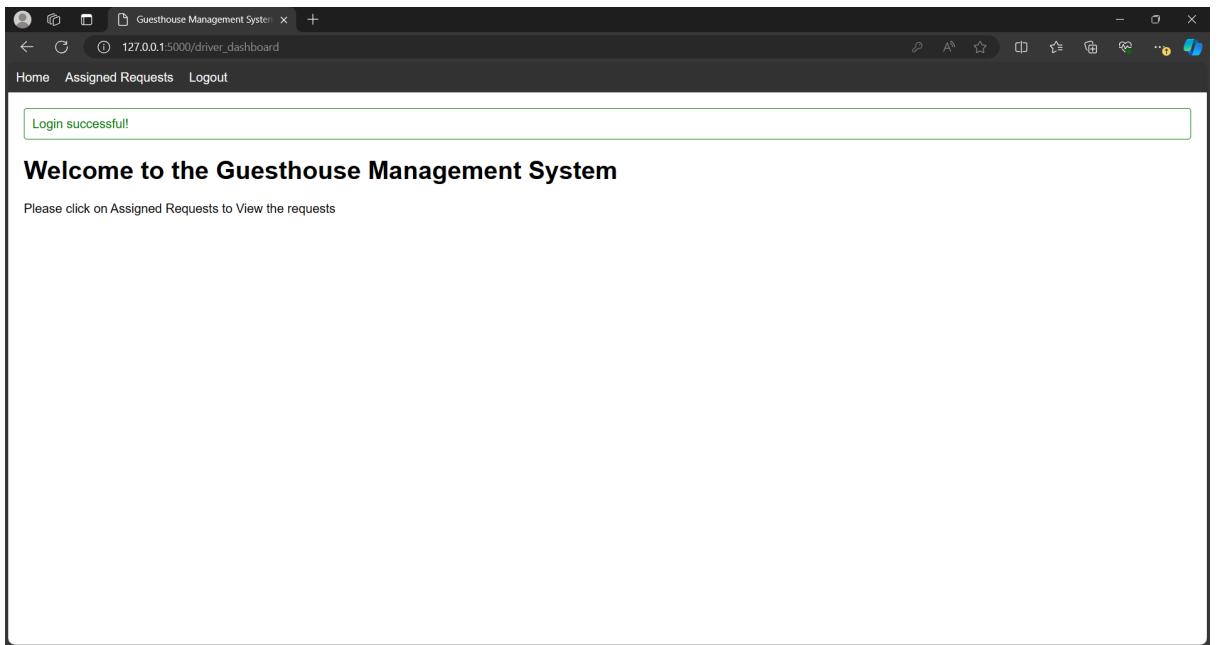
- This is the IITGN member dashboard and we can make a reservation through the above shown option.
- This current guest dashboard is the home page and the user can login with their credentials through the login button shown above.

D. Housekeeping Staff Dashboard:

The screenshot shows a web browser window titled "Guesthouse Management System" with the URL "127.0.0.1:5000/housekeeping_staff_dashboard". The page displays a green success message "Login successful!". Below it, a bold header reads "Welcome to the Guesthouse Management System". A small instruction at the bottom says "Please click on Assigned Requests to View/Close the requests".

- This is the housekeeping staff dashboard and we can see the assigned requests for housekeeping staff through the above shown option.
- And from the logout option we can logout from the dashboard.

E. Driver Dashboard:



- This is the driver dashboard and we can see the assigned requests for driver through the above shown option.
- And we can logout through the logout option beside the assigned requests option.

3.2 Responsibility of G2:

1. Concurrent multi-user access

As you may know, our web app has different logins, so different types of users can access our web app and can modify the database concurrently. For this, we applied locks for some of our database tables so that at a time, only a user can update the information, preventing concurrent transactions from interfering with each other.

For example, guest_travel_request form can be filled by multiple users/guests. So, we applied locks using SQLAlchemy's (python SQL toolkit, which is used to manage SQL databases using pythonic language) support.

```
@guest.route('/current_guest_dashboard/guest_travel_request', methods=['GET', 'POST'])
@login_required
def guest_travel_request():
    form = TravelRequestForm()
    if form.validate_on_submit():
        # Handle travel request form submission
        # Acquire lock on the travel_request table
        locked_table = select(travel_request).with_for_update()
        db.session.execute(locked_table)

        with db.session.begin_nested():
            highest_id = db.session.query(db.func.max(travel_request.travel_request_id)).scalar()
            if highest_id is None:
                highest_id = 0
            travel_request_add = travel_request(
                travel_request_id=highest_id + 1,
                number_of_travellers=form.number_of_travellers.data,
                date_of_travel=form.date_of_travel.data,
                pick_up_time=form.pick_up_time.data,
                destination=form.destination.data,
                travel_purpose=form.travel_purpose.data
            )
            db.session.add(travel_request_add)
            db.session.flush() # Flush to generate the primary key before adding the initiated_travel_request
            initiated_travel_request = InitiatedTravelRequest(
                travel_request_id=highest_id + 1,
                guest_id=current_user.get_id()
            )
            db.session.add(initiated_travel_request)
        db.session.commit()
        flash('Travel request submitted successfully!', 'success')
        return redirect(url_for('current_guest_dashboard.guest_travel_request'))
    return render_template('guest_travel_request.html', form=form)
```

Code for guest_travel_request page with locking mechanism

For acquiring locks :

```
locked_table = select(travel_request).with_for_update()
```

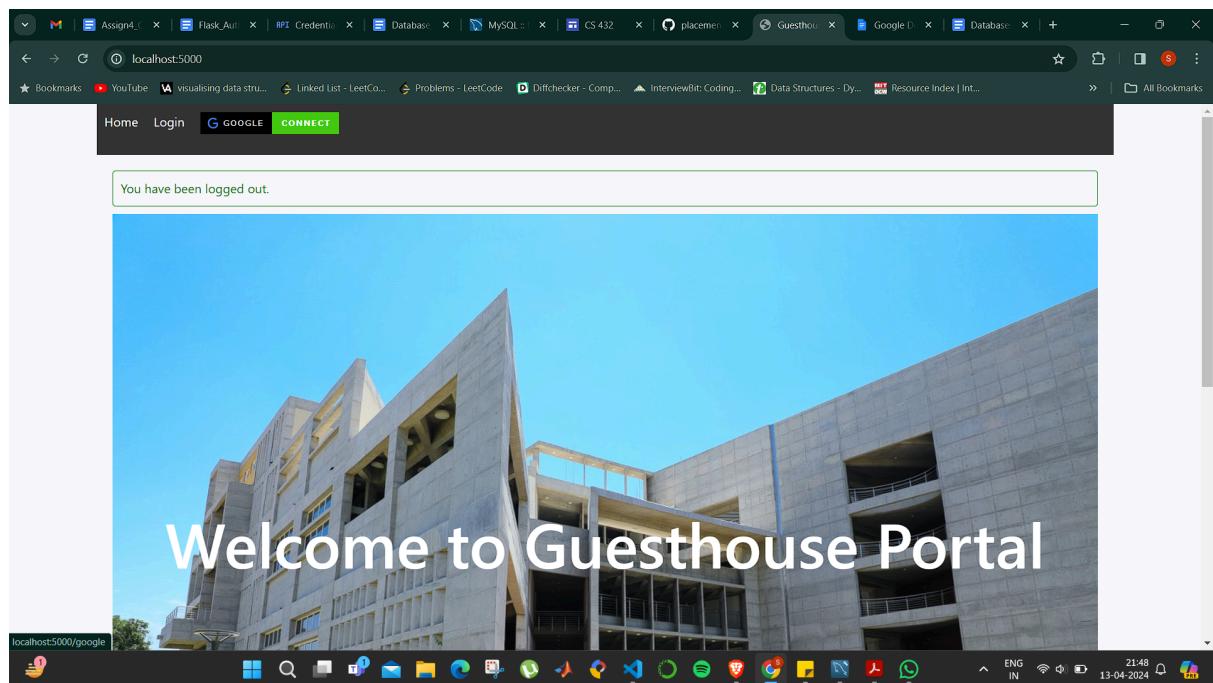
The above line creates an SQL statement “select __ for update”[6] that selects rows from the database table ‘travel_request’ and acquires a lock on them to prevent any other transaction from being modified until an existing transaction finishes.

db.session.commit(): This line commits the changes made within the transaction to the database and releases the lock acquired earlier.

To implement concurrent multi-user access, locks have been applied to the tables like travel_request, guest_travel_request, maintenance_request, guest_maintenance_request, reservation & bill.

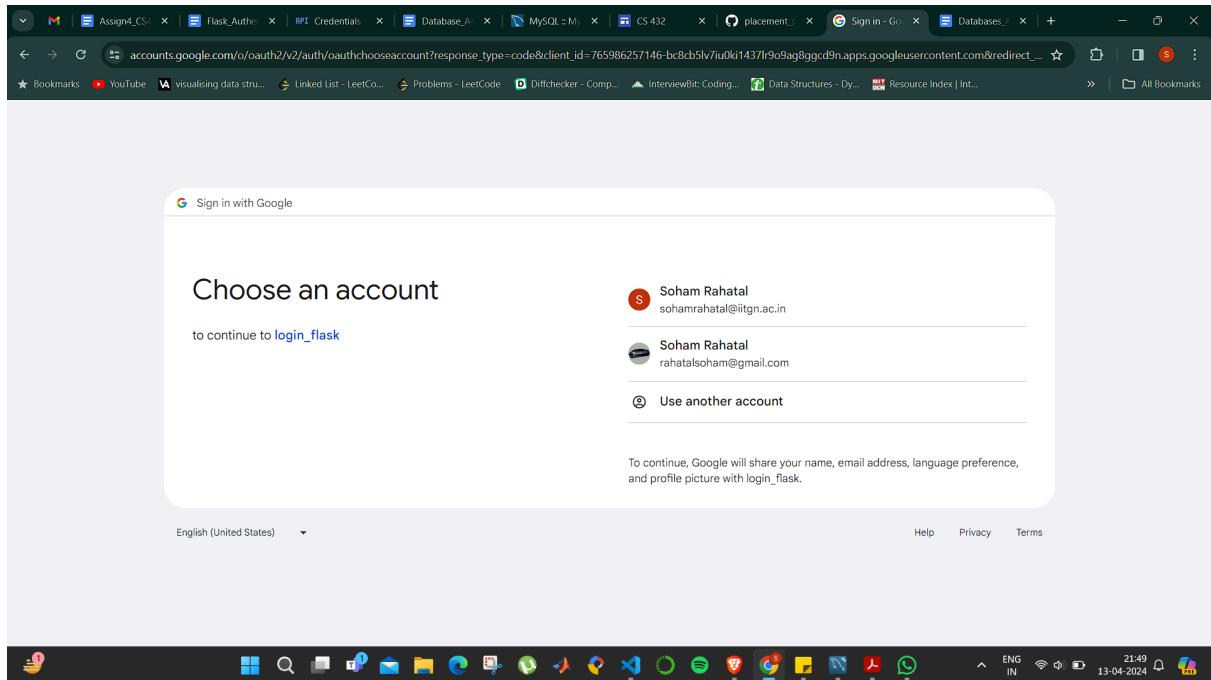
2. Google Authentication

Our web app has five different logins, and hospitality_staff (administrator) and iitgn_member are the only ones with an iitgn email ID. So, we added google authentication for hospitality_staff members and iitgn_member.

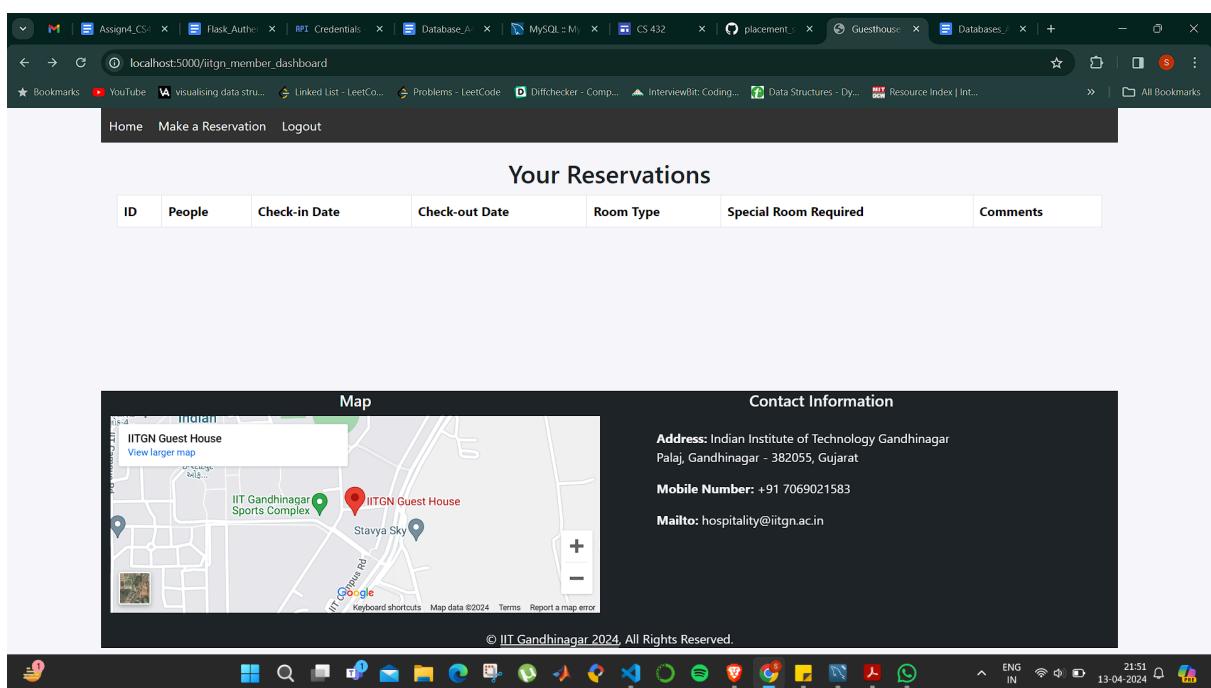


When you click on the [Google Connect] button to authenticate →

We are redirected to the page below to select the Google account.



After selecting the iitgn account i.e., sohamrahatal@iitgn.ac.in



We are redirected to the iitgn_member dashboard as my email_id/profile is present in the iitgn_member database table of our database 'guesthouse_db'.

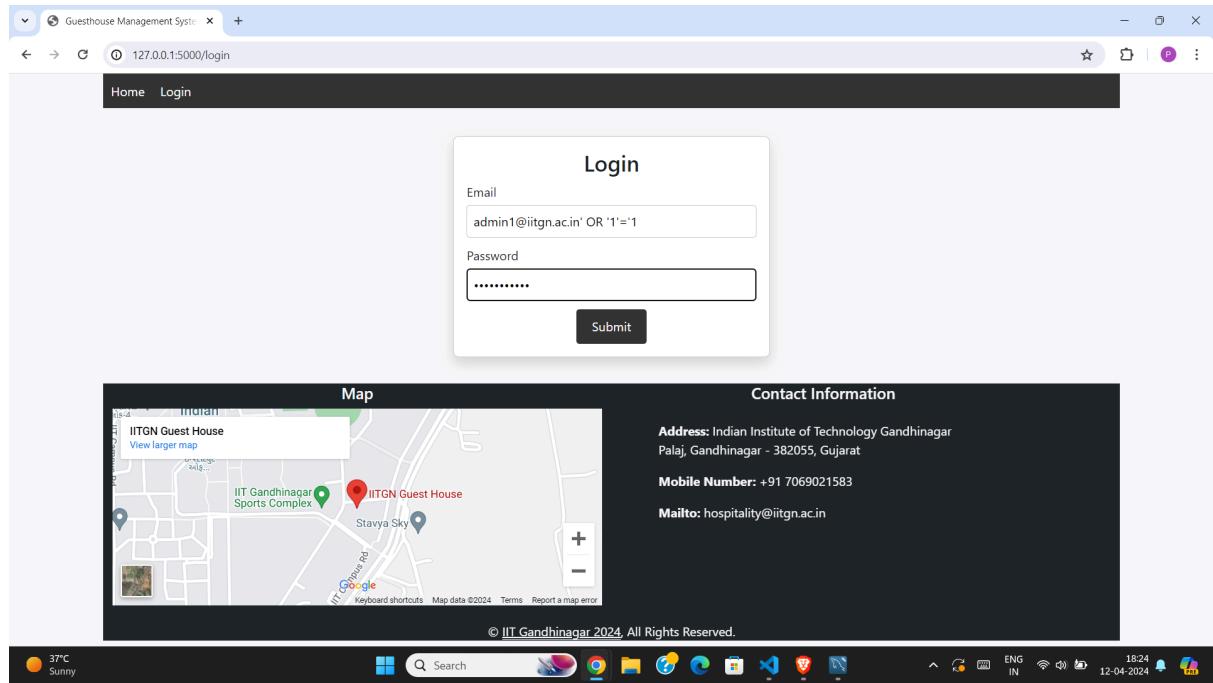
If an email_id is related to hospitality_staff, then that account will be redirected to the hospitality_staff dashboard of the web app.

For the rest logins, like driver, guest, and housekeeping_staff, they will have to login through the normal login system of the web app as they don't have iitgn email_id.

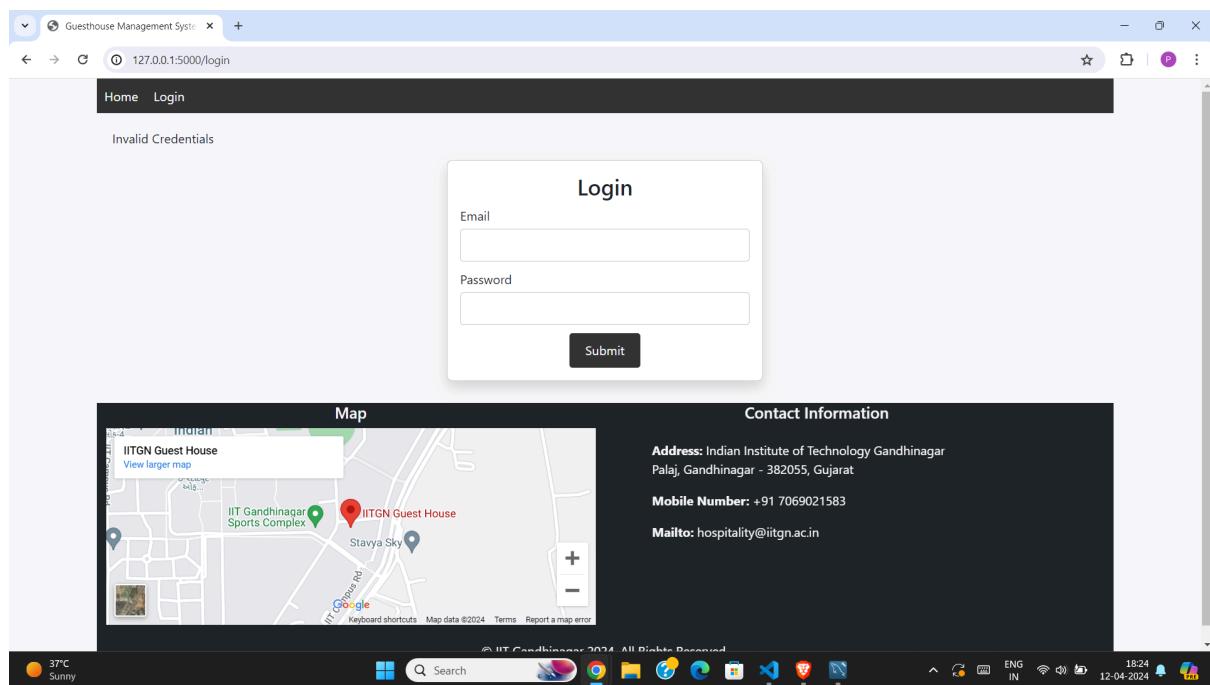
3.3 Responsibility of G1 & G2:

1. Attacks on our WebApp

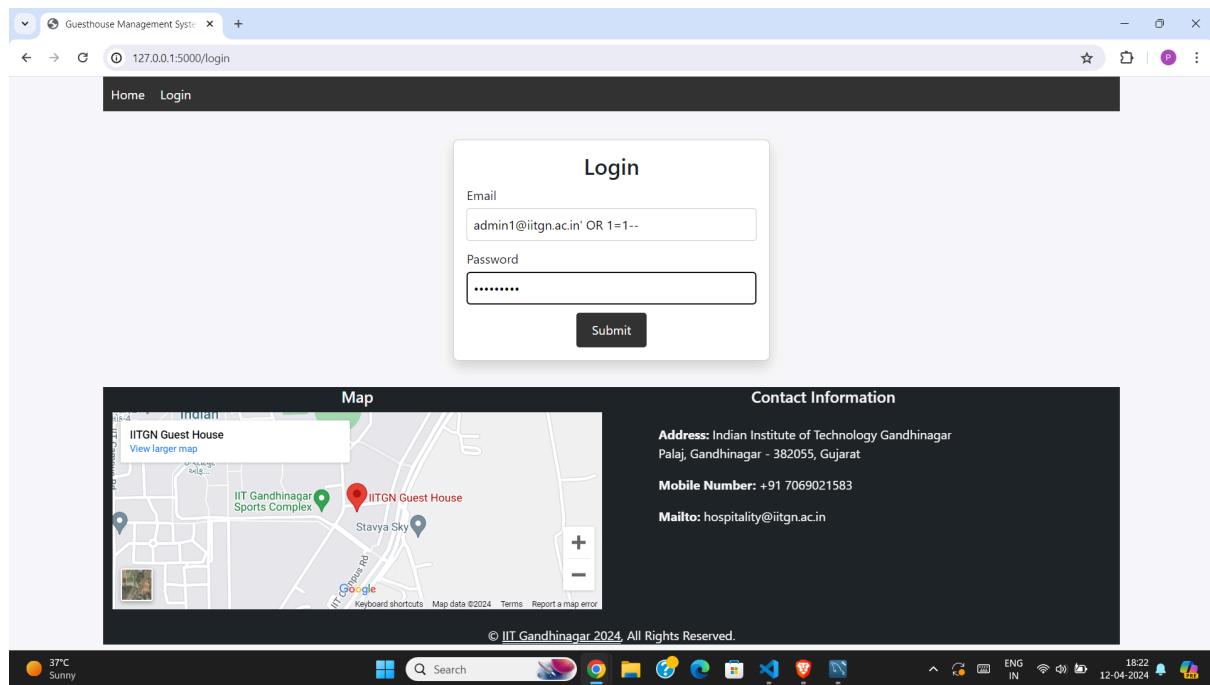
1. SQL Injection Error Attack:



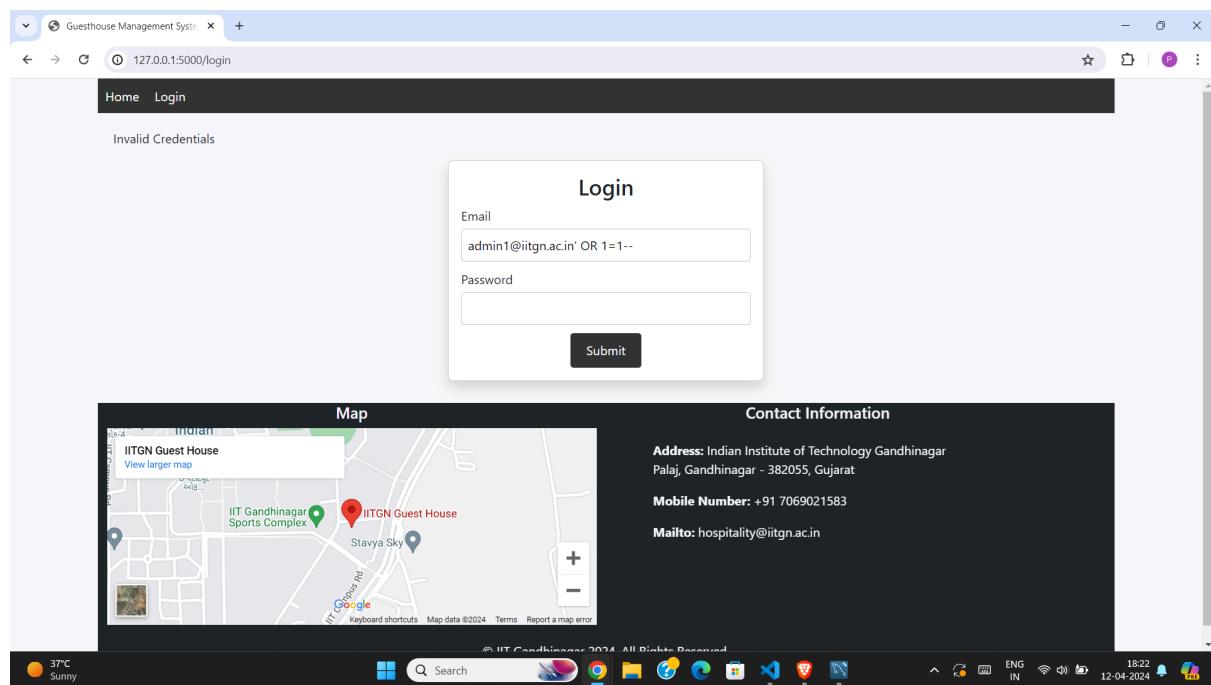
We try the first method, where we try to add an OR condition that is always true i.e. $1=1$, to modify the SQL query generated through the form.



We received an 'Invalid Credentials' message, and we could not hack into the system.



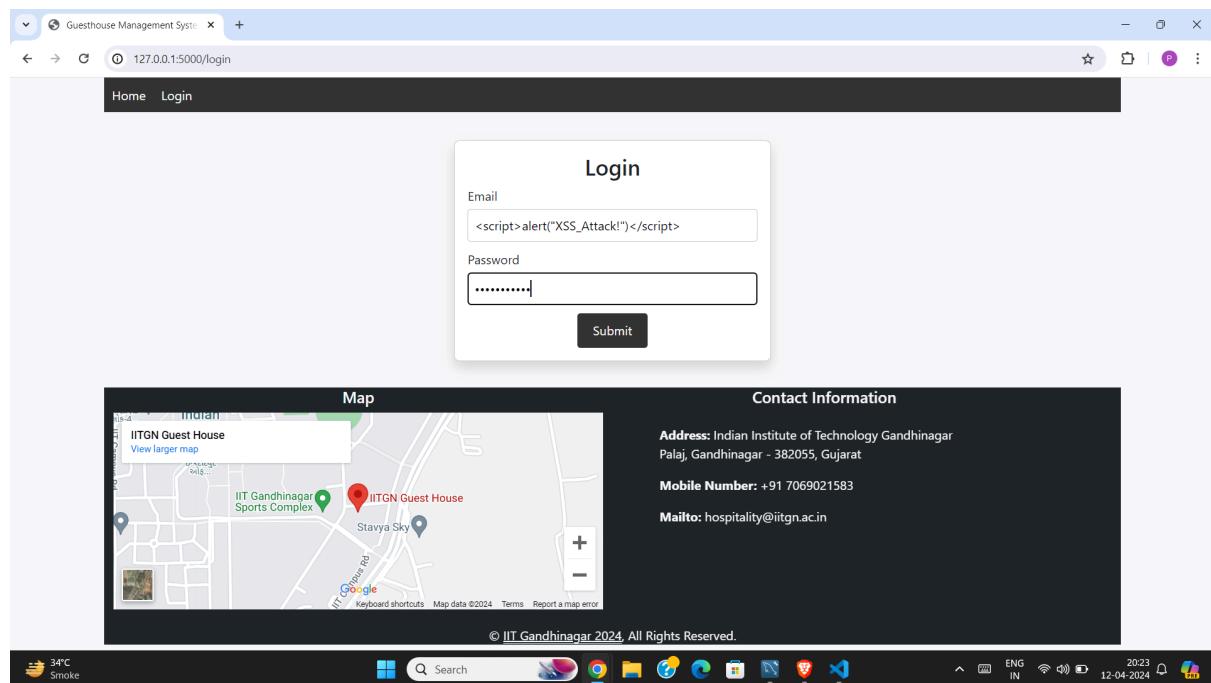
We tried the second method, where we used the symbol "--" which is used to comment in MySQL. It would comment the SQL code after it, such that we would be able to hack into the system.



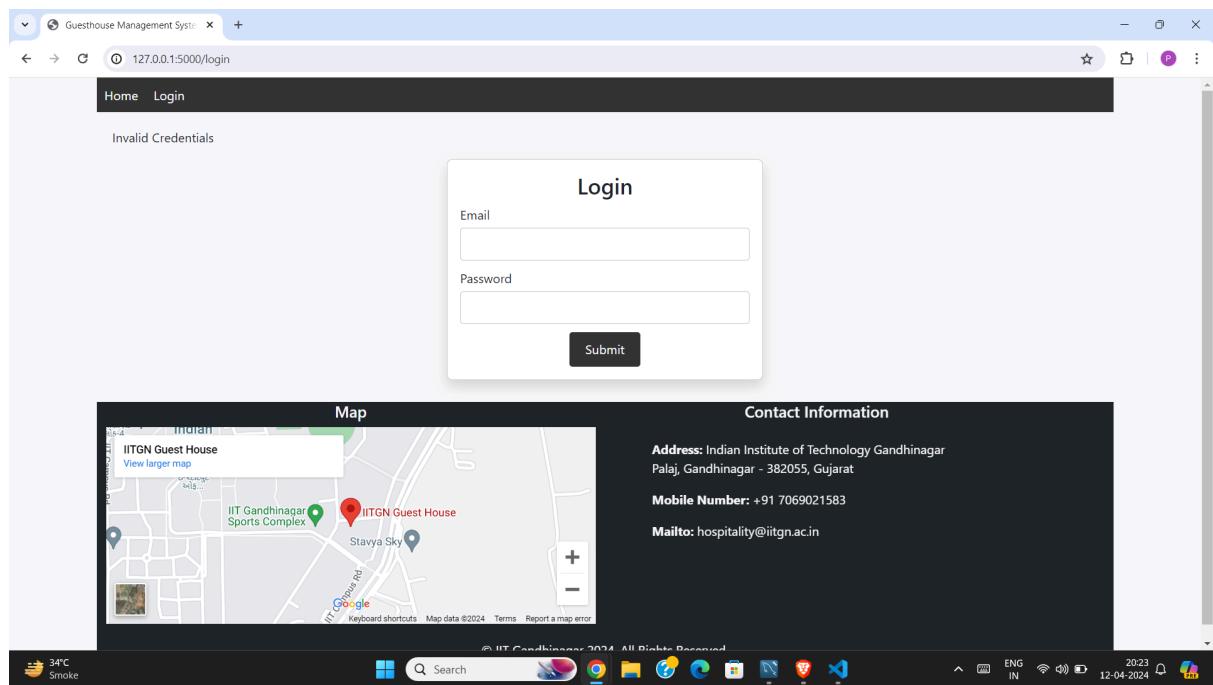
We received an 'Invalid Credentials' message, and we could not hack into the system.

Our System was able to withstand SQL Injection attacks because it uses parameterized queries, specifically through the ORM (Object-Relational Mapping) methods provided by the SQLAlchemy library to interact with the database.

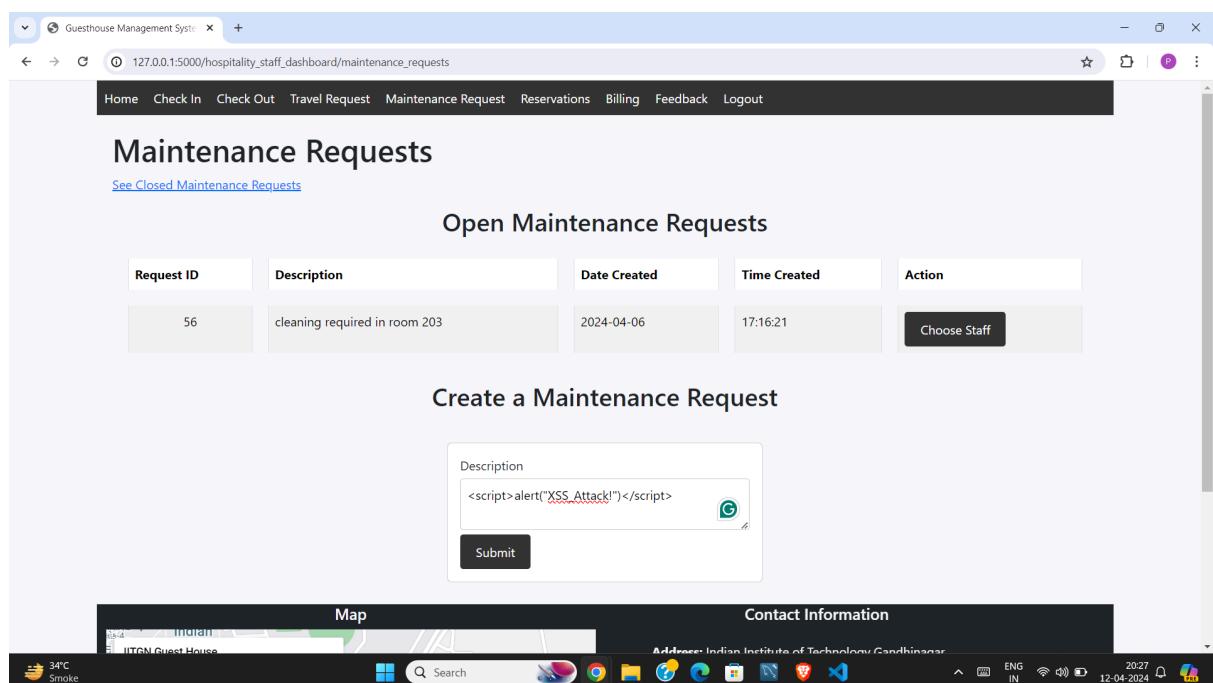
2. XSS Attack:



We tried to attempt an XSS attack at the login page in our website, if the attack is successful we would receive an alert pop-up of “XSS_Attack!” on web-page.



We received an ‘Invalid Credentials’ message, and we could not conduct a XSS attack on the login page.



Next we tried to test for XSS attack in admin login where in Maintenance request form, I entered my own script. Upon sucessfull attack, we would receive an alert pop-up of “XSS_Attack!” on the web-page.

The screenshot shows a web application titled "Guesthouse Management System" at the URL 127.0.0.1:5000/hospitality_staff_dashboard/maintenance_requests. The page has a navigation bar with links: Home, Check In, Check Out, Travel Request, Maintenance Request, Reservations, Billing, Feedback, and Logout. A success message "Maintenance request created successfully!" is displayed in a green box. Below it, the title "Maintenance Requests" is shown, followed by a link "See Closed Maintenance Requests". The main content area is titled "Open Maintenance Requests" and contains a table with five columns: Request ID, Description, Date Created, Time Created, and Action. Two rows of data are present:

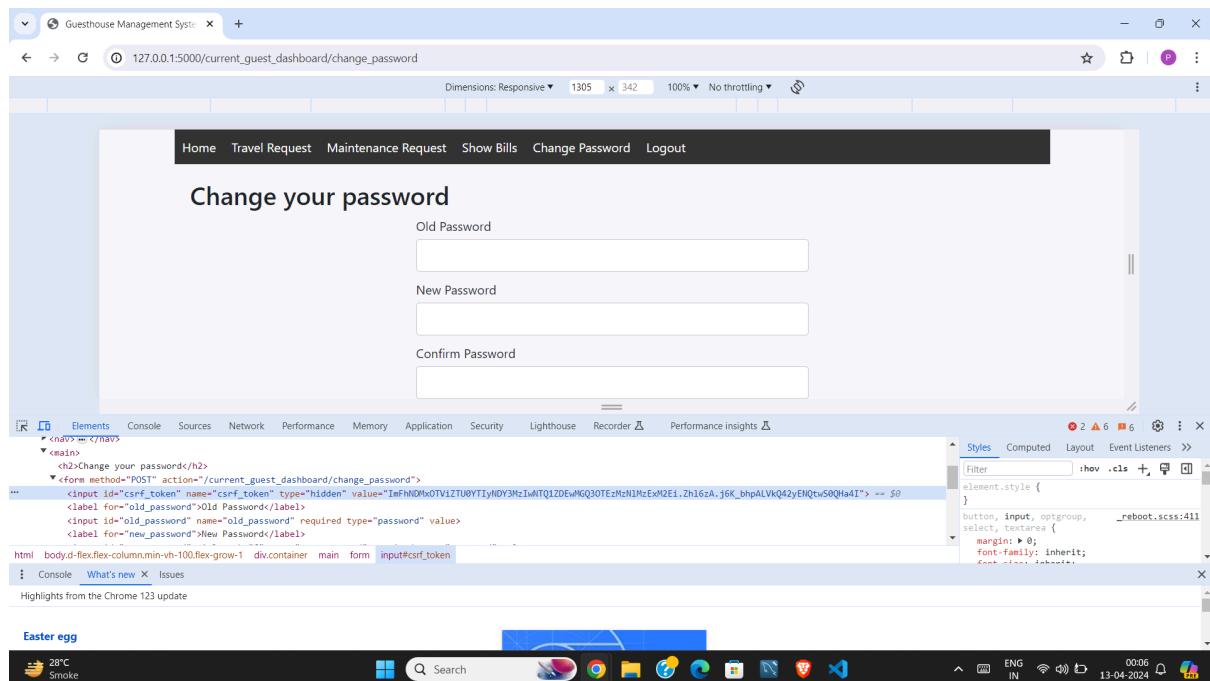
Request ID	Description	Date Created	Time Created	Action
56	cleaning required in room 203	2024-04-06	17:16:21	<button>Choose Staff</button>
59	<script>alert("XSS_Attack!")</script>	2024-04-12	20:27:39	<button>Choose Staff</button>

Below the table, there is a section titled "Create a Maintenance Request" with a form field labeled "Description". The system status bar at the bottom shows "34°C Smoke" and various system icons.

Our attempt to insert script is failed and the maintenance request form is submitted with our entered code as plain description text of the form. We could not conduct a sucessful XSS attack on the admin page.

We could not conduct XSS attacks sucessfully on our system, because Flask and its template engine Jinja2 have built-in protections against XSS. Flask-WTF provides built-in protection against XSS attacks by automatically escaping HTML entities when rendering form fields and Jinja2 automatically escapes HTML entities by default when rendering templates. Moreover, Modern web browsers like Google Chrome also have built-in XSS protection mechanisms that might prevent certain XSS attacks from being executed.

3. Cross-Site Request Forgery (CSRF) Attack:



An external site might access the csrf_token for sensitive user information in the website, like changing passwords in the current guest account.

```
File Edit Selection View Go Run Terminal Help ← → IITGN-Guesthouse-Management-System-main

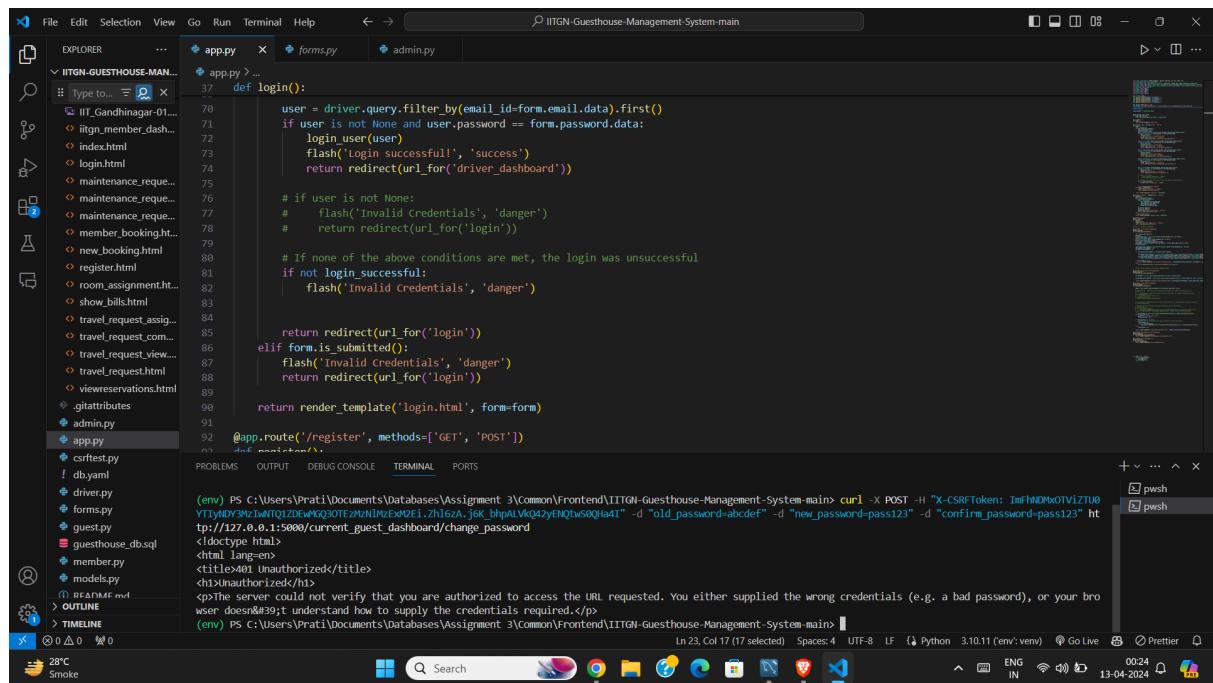
EXPLORER app.py forms.py admin.py
IIT_Gandhinagar-01...
iitgn_member_dash...
index.html
login.html
maintenance_reque...
maintenance_reque...
maintenance_reque...
member_booking.ht...
new_booking.html
register.html
room_assignment.ht...
show_bill.html
travel_request_assig...
travel_request_com...
travel_request_view...
travel_request.html
viewreservations.html
giatributes
admin.py
app.py
app.py
csrfest.py
! db.yaml
driver.py
forms.py
guest.py
guesshouse_db.sql
models.py
OUTLINE
TIMELINE
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
PS C:\Users\Prati\Documents\Datasets\Assignment 3\Common\Frontend\IITGN-Guesthouse-Management-System-main> .\venv\Scripts\activate
(env) PS C:\Users\Prati\Documents\Datasets\Assignment 3\Common\Frontend\IITGN-Guesthouse-Management-System-main> curl -X POST -H "X-CSRFToken: ImFnHDWbOTV1ZTU8YTiyNDY3MzIwNTQ1ZDEwMGQ3OTEzMzN1MzExM2E1.Zh16zA.j6K_bhpALV042yENQtws0QHa4I" -d "old_password=abcdef" -d "new_password=pass123" -d "confirm_password=pass123" http://127.0.0.1:5000/current_guest_dashboard/change_password
Ln 23, Col 17 (17 selected) Spaces: 4 UTF-8 LF Python 3.10.11 (env:venv) Go Live Prettier
28°C Smoke
28°C Smoke
```

The screenshot shows a code editor with the file 'app.py' open. The code defines a 'login()' function that queries a database for a user by email ID and checks if the password is correct. If successful, it logs the user in and redirects to the driver dashboard. If unsuccessful, it flashes an error message. The code also includes a route for 'register' with both GET and POST methods. The status bar at the bottom shows the command prompt and some system information like temperature and battery level.

We tried to test if an external site can request to modify the user data without their information on their behalf.

```
curl -X POST -H "X-CSRFToken:  
ImFhNDMxOTViZTU0YTIyNDY3MzIwNTQ1ZDEwMGQ3OTEzMzNlMzExM2Ei.Zhl  
6zA.j6K_bhpALVkJ42yENQtwS0QHa4I" -d "old_password=abcdef" -d  
"new_password=pass123" -d "confirm_password=pass123"  
http://127.0.0.1:5000/current\_guest\_dashboard/change\_password
```

We executed the above code to try to change the current password of the guest (“abcdef”) to a new password (“pass123”).



```
curl -X POST -H "X-CSRFToken: ImFhNDMxOTViZTU0YTIyNDY3MzIwNTQ1ZDEwMGQ3OTEzMzNlMzExM2Ei.Zhl  
6zA.j6K_bhpALVkJ42yENQtwS0QHa4I" -d "old_password=abcdef" -d  
"new_password=pass123" -d "confirm_password=pass123"  
http://127.0.0.1:5000/current\_guest\_dashboard/change\_password
```

(env) PS C:\Users\Prati\Documents\Assignment_3\Common\Frontend\IITGN-Guesthouse-Management-System-main> curl -X POST -H "X-CSRFToken: ImFhNDMxOTViZTU0YTIyNDY3MzIwNTQ1ZDEwMGQ3OTEzMzNlMzExM2Ei.Zhl
6zA.j6K_bhpALVkJ42yENQtwS0QHa4I" -d "old_password=abcdef" -d "new_password=pass123" -d "confirm_password=pass123" ht
tp://127.0.0.1:5000/current_guest_dashboard/change_password
<!DOCTYPE html>
<html lang="en">
<title>401 Unauthorized</title>
<h1>Unauthorized</h1>
<p>The server could not verify that you are authorized to access the URL requested. You either supplied the wrong credentials (e.g. a bad password), or your bro
wsers doesn't understand how to supply the credentials required.</p>

We are unauthorized in changing the password for the user externally, and their data is protected.

Flask extensions such as Flask-WTF render a CSRF token that is automatically generated and included in the form. This token is unique per session and form. Therefore, Flask-WTF automatically adds CSRF protection to all forms created with it.

4. Path Traversal Attack

Login successful!

Landed on hospitality_staff dashboard!

Occupied Rooms

Room Number	Guest ID	Guest's First Name	Guest's Last Name	Phone no	Email
None	101	Cathy	Green	8979808934	cathy@gmail.com
None	102	efjleqn	dflmn	0932409192	asefkn@gmail.com
None	103	aklfe	alsjfb	982349823	asklfj@gmail.com
None	104	afdlkn	lmdfn	972032322	fkjnsdf@gmail.com
None	105	fjk	lkfn	1343321232	lejf@gmail.com

Assigned Open Maintenance Requests

Request ID	Description	Date when created	Housekeeping Staff ID	Status
22	Curabitur at ipsum ac tellus semper interdum.	2023-03-12	8	open

We are looking that if a housekeeping staff is able to hack into to the system and access sensitive information of current guests and members through locally stored files.

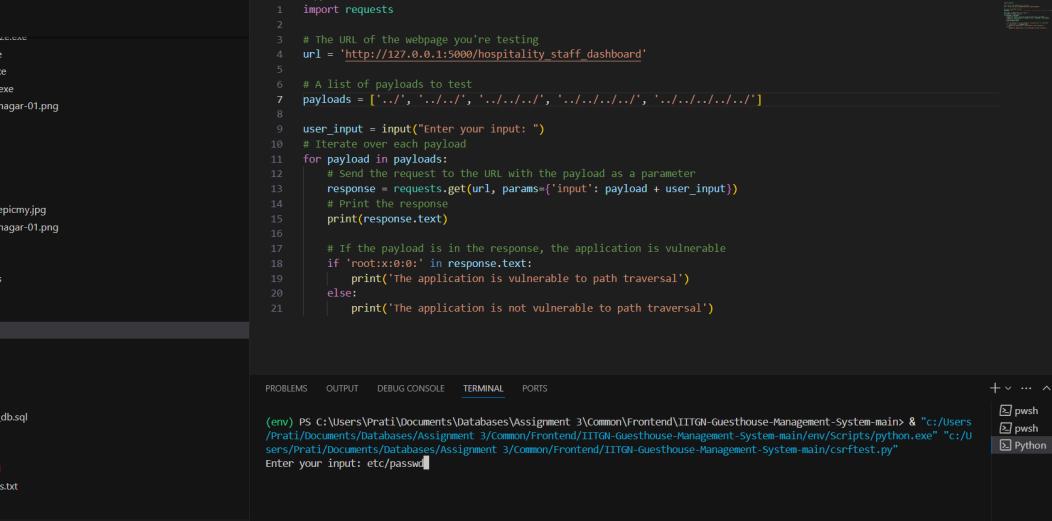
```
csrftest.py > ...
1 import requests
2
3 # The URL of the webpage you're testing
4 url = 'http://127.0.0.1:5000/hospitality_staff_dashboard'
5
6 # A list of payloads to test
7 payloads = ['..//', '..//..', '..//..//', '..//..//..', '..//..//..//..']
8
9 user_input = input("Enter your input: ")
10 # Iterate over each payload
11 for payload in payloads:
12     # Send the request to the URL with the payload as a parameter
13     response = requests.get(url, params={'input': payload + user_input})
14     # Print the response
15     print(response.text)
16
17     # If the payload is in the response, the application is vulnerable
18     if 'root:x:0:0:' in response.text:
19         print('The application is vulnerable to path traversal')
20     else:
21         print('The application is not vulnerable to path traversal')
```

Code to test for path traversal attack

1. To test for file traversal attack, we imported the requests library, which is a popular Python library that makes HTTP requests.

2. Setting the target URL: The URL of the web page you're testing is defined. In this case, it's set to 'http://127.0.0.1:5000/hospitality_staff_dashboard'.
 3. Defining the payloads (..): A list of payloads to test is defined. These payloads are common path traversal sequences that attempt to move up in the directory structure.
 4. Getting user input: The script asks for user input. This input is expected to be the remaining part of the path after the payload
 5. Sending the requests and checking the responses: The script then enters a loop where it iterates over each payload. For each payload, it:
 - a. Sends a GET request to the URL with the payload and user input as a parameter.
 - b. Prints the response.
 - c. Checks if the response includes sensitive information. If it does, it prints a message indicating that the application is vulnerable to path traversal. If it doesn't, it prints a message indicating that the application is not vulnerable to path traversal.

This is a Unix file that contains user account information. It should not be accessible through a web application.



The screenshot shows a terminal window with the following command and output:

```
(env) PS C:\Users\Prati\Documents\Database\Assignment 3\Common\Frontend\IITGN-Guesthouse-Management-System-main> & "c:/Users/Prati/Documents/Database/Assignment 3/Common/Frontend/IITGN-Guesthouse-Management-System-main/env/Scripts/python.exe" "c:/Users/Prati/Documents/Database/Assignment 3/Common/Frontend/IITGN-Guesthouse-Management-System-main/csrftest.py"
Enter your input: etc/passw
```

We tried to insert user input to test on the terminal

```

File Edit Selection View Go Run Terminal Help ← → IITGN-Guesthouse-Management-System-main
EXPLORER app.py csrftest.py admin.py
IITGN-GUESTHOUSE-MANAGEMENT-MAIN
env Scripts
- pytest.exe
- python.exe
- pythonw.exe
IIT_Gandhinagar-01.png
pyenv.cfg static
- css
- js
scripts.js guesthousepicmy.jpg
IIT_Gandhinagar-01.png
Tasks templates
.gitattributes
admin.py app.py
csrftest.py
! db.yaml
driver.py
forms.py
guest.py
guesthouse_db.sql
member.py
models.py
README.md
requirements.txt
staff.py
etc/shadow
OUTLINE
TIMELINE
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
The application is not vulnerable to path traversal
<!DOCTYPE html>
<html lang=en>
<title><b>Unauthorized</b></title>
<h1>Unauthorized</h1>
<p>The server could not verify that you are authorized to access the URL requested. You either supplied the wrong credentials (e.g. a bad password), or your browser doesn't understand how to supply the credentials required.</p>
The application is not vulnerable to path traversal
(en) PS C:\Users\Prati\Documents\Database\Assignment 3\Common\Frontend\IITGN-Guesthouse-Management-System-main> █
Ln 7, Col 75 Spaces: 4 UTF-8 CRLF Python 3.10.11 (env:venv) Go Live Prettier
+ ... ^ x
p push p push Python
33°C Smoke
Search
12:57 13-04-2024

```

We received an unauthorized error response, and we could not access sensitive information

b. `etc/shadow`

```

File Edit Selection View Go Run Terminal Help ← → IITGN-Guesthouse-Management-System-main
EXPLORER app.py csrftest.py admin.py
IITGN-GUESTHOUSE-MANAGEMENT-MAIN
env Scripts
- pytest.exe
- python.exe
- pythonw.exe
IIT_Gandhinagar-01.png
pyenv.cfg static
- css
- js
scripts.js guesthousepicmy.jpg
IIT_Gandhinagar-01.png
Tasks templates
.gitattributes
admin.py app.py
csrftest.py
! db.yaml
driver.py
forms.py
guest.py
guesthouse_db.sql
member.py
models.py
README.md
requirements.txt
staff.py
etc/shadow
OUTLINE
TIMELINE
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
The application is not vulnerable to path traversal
<!DOCTYPE html>
<html lang=en>
<title><b>Unauthorized</b></title>
<h1>Unauthorized</h1>
<p>The server could not verify that you are authorized to access the URL requested. You either supplied the wrong credentials (e.g. a bad password), or your browser doesn't understand how to supply the credentials required.</p>
The application is not vulnerable to path traversal
(en) PS C:\Users\Prati\Documents\Database\Assignment 3\Common\Frontend\IITGN-Guesthouse-Management-System-main> & "c:/Users/Prati/Documents/Database/Assignment 3/Common/Frontend/IITGN-Guesthouse-Management-System-main/env/scripts/python.exe" "c:/Users/Prati/Documents/Database/Assignment 3/Common/Frontend/IITGN-Guesthouse-Management-System-main/csrftest.py"
Enter your input: etc/shadow █
Ln 7, Col 75 Spaces: 4 UTF-8 CRLF Python 3.10.11 (env:venv) Go Live Prettier
+ ... ^ x
p push p push Python
33°C Smoke
Search
12:58 13-04-2024

```

We tried to insert user input to test on the terminal

The screenshot shows a Windows desktop environment with a Visual Studio Code (VS Code) window open. The title bar of the window reads "IITGN-Guesthouse-Management-System-main". The left sidebar displays a file tree for the project "IITGN-GUESTHOUSE-MANAGEMENT-MAIN". The main editor area contains a Python script named "csrftest.py". The script imports the "requests" module and defines a URL for testing. It then lists several payloads and iterates over them, sending requests to the URL with each payload as a parameter. The response is printed, and the script checks if the string "root:x:0:0:" is present in the response text to determine if the application is vulnerable to path traversal. The status bar at the bottom shows the command prompt "PS C:\Users\Prati\Documents\Assignment 3\Common\Frontend\IITGN-Guesthouse-Management-System-main>" and the file path "app.py".

```
# The URL of the webpage you're testing
url = "http://127.0.0.1:5000/hospitality_staff_dashboard"

# A list of payloads to test
payloads = ["/", "../..", "../../..", "../../../..", "../../../../.."]

user_input = input("Enter your input: ")
for payload in payloads:
    # Send the request to the URL with the payload as a parameter
    response = requests.get(url, params={'input': payload + user_input})
    # Print the response
    print(response.text)

    # If the payload is in the response, the application is vulnerable
    if 'root:x:0:0:' in response.text:
        print('The application is vulnerable to path traversal')
    else:
        print('The application is not vulnerable to path traversal')
```

We received an unauthorized error response, and we could not access sensitive information. This is another Unix file that contains encrypted password information. It should also not be accessible.

c. `var/www/html/index.html`

This is a common location for the main HTML file of a web server. If you can access this file, it might indicate a path traversal vulnerability.

```
File Edit Selection View Go Run Terminal Help ← → ITGN-Guesthouse-Management-System-main
EXPLORER ... app.py csrftest.py admin.py
ITGN-GUESTHOUSE-MANAGEMENT-MAIN
env
Scripts
pygments.css
pytest.exe
python.exe
pythontw.exe
IIT_Gandhinagar-01.png
pyvenv.cfg
static
> css
> js
scripts.js
guesthousepicmy.jpg
IIT_Gandhinagar-01.png
> Tasks
> templates
.gitattributes
admin.py
app.py
csrftest.py
! db.yaml
driver.py
forms.py
guest.py
guesthouse_db.sql
member.py
models.py
README.md
requirements.txt
staff.py
> OUTLINE
> TIMELINE
33°C Smoke
app.py
csrftest.py > ...
1 import requests
2
3 # The URL of the webpage you're testing
4 url = 'http://127.0.0.1:5000/hospitality_staff_dashboard'
5
6 # A list of payloads to test
7 payloads = ['/..', '../..', '../../..', '../..../..', '../../..../..']
8
9 user_input = input("Enter your input: ")
10 # Iterate over each payload
11 for payload in payloads:
12     # Send the request to the URL with the payload as a parameter
13     response = requests.get(url, params={'input': payload + user_input})
14     # Print the response
15     print(response.text)
16
17     # If the payload is in the response, the application is vulnerable
18     if 'root:x:0:0:' in response.text:
19         print('The application is vulnerable to path traversal')
20     else:
21         print('The application is not vulnerable to path traversal')

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
+ ... ×
! pwsh
! pwsh
! Python

<title>401 Unauthorized</title>
<h1>Unauthorized</h1>
sp>The server could not verify that you are authorized to access the URL requested. You either supplied the wrong credentials (e.g. a bad password), or your browser doesn't understand how to supply the credentials required.</p>

The application is not vulnerable to path traversal
(env) PS C:\Users\Prati\Documents\GitHub\Assignment 3\Common\Frontend\ITGN-Guesthouse-Management-System-main & "c:/Users/Prati/Documents/Databases/Assignment 3/Common/Frontend/ITGN-Guesthouse-Management-System-main/env/Scripts/python.exe" "c:/Users/Prati/Documents/Databases/Assignment 3/Common/Frontend/ITGN-Guesthouse-Management-System-main/csrf.py"
Enter your input: var/www/html/index.html
Ln 7, Col 75 Spaces: 4 UTF-8 CRLF Python 3.10.11 (env:venv) Go Live Prettier
ENG 12:58 13-04-2024
```

We tried to insert user input to test on the terminal

```

File Edit Selection View Go Run Terminal Help ← → IITGN-Guesthouse-Management-System-main
EXPLORER app.py csrftest.py admin.py
IITGN-GUESTHOUSE-MANAGEMENT-MAIN
env Scripts
  - pyvenv.exe
  - pytest.exe
  - python.exe
  - pythonw.exe
  IIT_Gandhinagar-01.png
pyenv.cfg static
  > css
  > js
  scripts.js guesthousepicmy.jpg
  IIT_Gandhinagar-01.png
  > Tasks
  > templates
  .gitattributes
  admin.py
  app.py
  csrftest.py
  ! db.yaml
  driver.py
  forms.py
  guest.py
  guesthouse_db.sql
  member.py
  models.py
  README.md
  requirements.txt
  staff.py
  ...
  > OUTLINE
  > TIMELINE
X 0 △ 0 ⌂ 0
33°C Smoke
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
The application is not vulnerable to path traversal
<!DOCTYPE html>
<html lang=en>
<title><b>Unauthorized</b></title>
<h1>Unauthorized</h1>
<p>The server could not verify that you are authorized to access the URL requested. You either supplied the wrong credentials (e.g. a bad password), or your browser doesn't understand how to supply the credentials required.</p>
The application is not vulnerable to path traversal
(em) PS C:\Users\Prati\Documents\Database\Assignment 3\Common\Frontend\IITGN-Guesthouse-Management-System-main> Ln 7, Col 75 Spaces: 4 UTF-8 CRLF Python 3.10.11 (env:venv) Go Live Prettier
+ ... x pswsh pswsh Python
+ ... x
Search
12:58 13-04-2024
ENG IN

```

We received an unauthorized error response, and we could not access sensitive information

d. 4. `home/<username>/.ssh/id_rsa`

This is the location of the private key for SSH on a Unix system. If you can access this file, it's a serious security vulnerability.

```

File Edit Selection View Go Run Terminal Help ← → IITGN-Guesthouse-Management-System-main
EXPLORER app.py csrftest.py admin.py
IITGN-GUESTHOUSE-MANAGEMENT-MAIN
env Scripts
  - pyvenv.exe
  - pytest.exe
  - python.exe
  - pythonw.exe
  IIT_Gandhinagar-01.png
pyenv.cfg static
  > css
  > js
  scripts.js guesthousepicmy.jpg
  IIT_Gandhinagar-01.png
  > Tasks
  > templates
  .gitattributes
  admin.py
  app.py
  csrftest.py
  ! db.yaml
  driver.py
  forms.py
  guest.py
  guesthouse_db.sql
  member.py
  models.py
  README.md
  requirements.txt
  staff.py
  ...
  > OUTLINE
  > TIMELINE
X 0 △ 0 ⌂ 0
33°C Smoke
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
<title><b>Unauthorized</b></title>
<h1>Unauthorized</h1>
<p>The server could not verify that you are authorized to access the URL requested. You either supplied the wrong credentials (e.g. a bad password), or your browser doesn't understand how to supply the credentials required.</p>
The application is not vulnerable to path traversal
(em) PS C:\Users\Prati\Documents\Database\Assignment 3\Common\Frontend\IITGN-Guesthouse-Management-System-main> & "c:/Users/Prati/Documents/Database/Assignment 3/Common/Frontend/IITGN-Guesthouse-Management-System-main/env/scripts/python.exe" "c:/Users/Prati/Documents/Database/Assignment 3/Common/Frontend/IITGN-Guesthouse-Management-System-main/csrftest.py"
Enter your input: home/Prati/.ssh/id_rsa
Ln 7, Col 75 Spaces: 4 UTF-8 CRLF Python 3.10.11 (env:venv) Go Live Prettier
+ ... x pswsh pswsh Python
+ ... x
Search
12:59 13-04-2024
ENG IN

```

We tried to insert user input to test on the terminal

```

File Edit Selection View Go Run Terminal Help ← → IITGN-Guesthouse-Management-System-main
EXPLORER ITGN-GUESTHOUSE-MANAGEMENT-SYSTEM-MAIN ...
    env
        Scripts
            pytest.exe
            python.exe
            pythonw.exe
            IIT_Gandhinagar-01.png
        pyenv.cfg
    static
        css
        js
            scripts.js
            guesthousepicmy.jpg
            IIT_Gandhinagar-01.png
        Tasks
        templates
        gitattributes
        admin.py
        app.py
    csrftest.py
    db.yaml
    driver.py
    forms.py
    guest.py
    guesthouse_db.sql
    member.py
    models.py
    README.md
    requirements.txt
    staff.py
    ...
    OUTLINE
    TIMELINE
X 0 △ 0 ⌂ 0
33°C Smoke
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
The application is not vulnerable to path traversal
<!DOCTYPE html>
<html lang=en>
<title><b>Unauthorized</b></title>
<h1>Unauthorized</h1>
<p>The server could not verify that you are authorized to access the URL requested. You either supplied the wrong credentials (e.g. a bad password), or your browser doesn't understand how to supply the credentials required.</p>
The application is not vulnerable to path traversal
(env) PS C:\Users\Prati\Documents\Database\Assignment_3\Common\Frontend\IITGN-Guesthouse-Management-System-main> 
Ln 7, Col 75 Spaces: 4 UTF-8 CRLF Python 3.10.11 (env:venv) Go Live ⚡ Prettier 
+ ... x pswsh pswsh Python
+ ... x Search
12:59 ENG IN 13-04-2024

```

We received an unauthorized error response, and we could not access sensitive information

e. `Windows/System32/drivers/etc/hosts`

This is the location of the hosts file on a Windows system. If you can access this file, it might indicate a path traversal vulnerability.

```

File Edit Selection View Go Run Terminal Help ← → IITGN-Guesthouse-Management-System-main
EXPLORER ITGN-GUESTHOUSE-MANAGEMENT-SYSTEM-MAIN ...
    env
        Scripts
            pytest.exe
            python.exe
            pythonw.exe
            IIT_Gandhinagar-01.png
        pyenv.cfg
    static
        css
        js
            scripts.js
            guesthousepicmy.jpg
            IIT_Gandhinagar-01.png
        Tasks
        templates
        gitattributes
        admin.py
        app.py
    csrftest.py
    db.yaml
    driver.py
    forms.py
    guest.py
    guesthouse_db.sql
    member.py
    models.py
    README.md
    requirements.txt
    staff.py
    ...
    OUTLINE
    TIMELINE
X 0 △ 0 ⌂ 0
33°C Smoke
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
<title><b>Unauthorized</b></title>
<h1>Unauthorized</h1>
<p>The server could not verify that you are authorized to access the URL requested. You either supplied the wrong credentials (e.g. a bad password), or your browser doesn't understand how to supply the credentials required.</p>
The application is not vulnerable to path traversal
(env) PS C:\Users\Prati\Documents\Database\Assignment_3\Common\Frontend\IITGN-Guesthouse-Management-System-main> & "c:/Users/Prati/Documents/Database/Assignment_3/Common/Frontend/IITGN-Guesthouse-Management-System-main/env/scripts/python.exe" "c:/Users/Prati/Documents/Database/Assignment_3/Common/Frontend/IITGN-Guesthouse-Management-System-main/csrftest.py"
Enter your input: Windows\System32\drivers\etc\hosts
The application is not vulnerable to path traversal
(env) PS C:\Users\Prati\Documents\Database\Assignment_3\Common\Frontend\IITGN-Guesthouse-Management-System-main> 
Ln 7, Col 75 Spaces: 4 UTF-8 CRLF Python 3.10.11 (env:venv) Go Live ⚡ Prettier 
+ ... x pswsh pswsh Python
+ ... x Search
12:59 ENG IN 13-04-2024

```

We tried to insert user input to test on the terminal

The screenshot shows a Visual Studio Code (VS Code) interface with the title bar "IITGN-Guesthouse-Management-System-main". The left sidebar displays a file tree for the project "IITGN-GUESTHOUSE-MANAGEMENT-MAIN". The main editor area contains a Python script named "csrftest.py". The script imports the "requests" module and defines a URL for testing. It then lists several payloads and iterates over them, sending requests to the URL with each payload as a parameter. The response is printed, and the script checks if the string "root:x:0:0:" is present in the response text to determine if the application is vulnerable to path traversal. The terminal below shows the output of the script execution.

```
File Edit Selection View Go Run Terminal Help ← → IITGN-Guesthouse-Management-System-main
```

```
EXPLORER
```

```
IITGN-GUESTHOUSE-MANAGEMENT-MAIN
```

- env
- Scripts
 - pygments.css
 - pytest.exe
 - python.exe
 - pythonw.exe
 - IIT_Gandhinagar-01.png
- pyenv.cfg
- static
 - css
 - js
 - scripts.js
 - guesthousepicmy.jpg
 - IIT_Gandhinagar-01.png
 - Tasks
 - templates
- .gitattributes
- admin.py
- app.py
- csrftest.py
- ! db.yaml
- driver.py
- forms.py
- guest.py
- guesthouse.db.sql
- member.py
- models.py
- README.md
- requirements.txt
- staff.py

```
app.py csrftest.py admin.py
```

```
csrftest.py > ...
```

```
1 import requests
2
3 # The URL of the webpage you're testing
4 url = "http://127.0.0.1:5000/hospitality_staff_dashboard"
5
6 # A list of payloads to test
7 payloads = [('/', './', '../', '../../', '../..', '../../..', '../..../..', '../../..../..', '../..../..../..']
8
9 user_input = input("Enter your input: ")
10 # Iterate over each payload
11 for payload in payloads:
12     # Send the request to the URL with the payload as a parameter
13     response = requests.get(url, params={'input': payload + user_input})
14     # Print the response
15     print(response.text)
16
17     # If the payload is in the response, the application is vulnerable
18     if 'root:x:0:0:' in response.text:
19         print('The application is vulnerable to path traversal')
20     else:
21         print('The application is not vulnerable to path traversal')
```

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
```

```
The application is not vulnerable to path traversal
```

```
<!DOCTYPE html>
<html lang=en>
<title>401 Unauthorized</title>
<h1>Unauthorized</h1>
<p>The server could not verify that you are authorized to access the URL requested. You either supplied the wrong credentials (e.g. a bad password), or your browser doesn't understand how to supply the credentials required.</p>
```

```
The application is not vulnerable to path traversal
```

```
(env) PS C:\Users\Prati\Documents\Assignment 3\Common\Frontend\IITGN-Guesthouse-Management-System-main>
```

```
Ln 7, Col 75 Spaces: 4 UTF-8 CRLF Python 3.10.10 (env:venv) Go Live Prettier
```

```
13:00 ENG IN 13:04:2024
```

We received an unauthorized error response, and we could not access sensitive information

The Flask web framework, has several built-in features that help protect against path traversal attacks:

URL Routing: Flask uses URL routing to map URLs to Python functions (known as routes). When a request is made to a URL, Flask executes the corresponding function and returns the result as a response. This means that the URLs in your application don't directly map to files or directories on your server, which makes path traversal attacks difficult.

Template Rendering: Flask uses the Jinja2 template engine to render views. When you call `render_template`, Flask looks for the specified template file in your templates folder, renders it, and returns the result as a response. This process is safe from path traversal attacks because Flask doesn't expose your file system structure to the client.

Form Handling: The request object in Flask provides a secure way to handle form data. When you call “request.form.get”, Flask retrieves the specified form field from the request. This process is safe from path traversal attacks because Flask doesn't use the form data to access files or directories on your server.

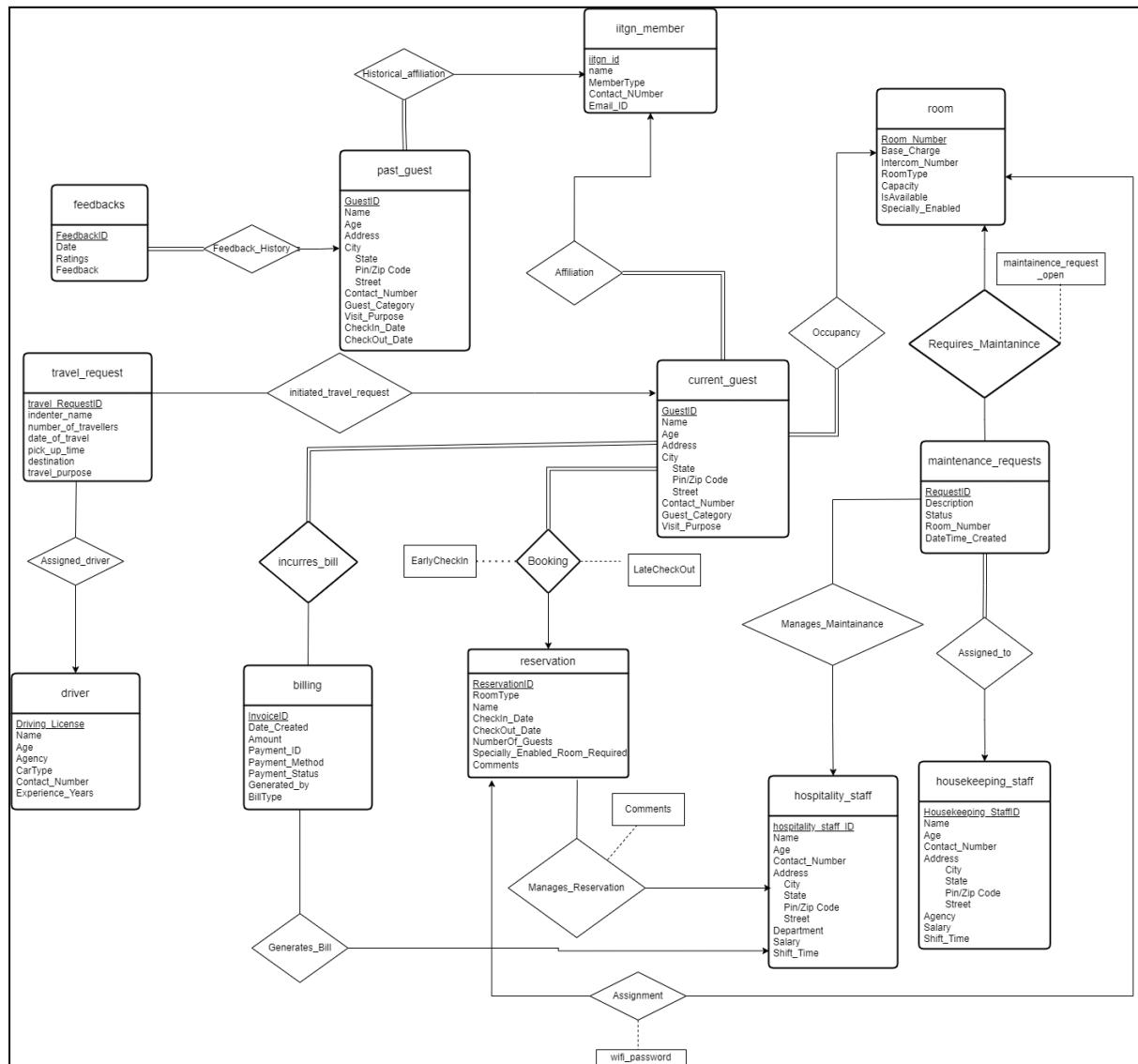
Database Access: Flask-SQLAlchemy, which you're using to interact with your database, uses SQLAlchemy's ORM (Object-Relational Mapping) to map Python classes to database

tables. This means that your database queries don't directly map to files or directories on your server, which makes path traversal attacks difficult.

Configuration: Flask's configuration system allows you to store sensitive information, like your secret key and database URI, in your application's configuration. This information is not exposed to the client, which helps protect against path traversal attacks.

2. Relations and their Constraints from feedback relation with ER Diagram in Assignment 1

ER Diagram as In Assignment 1



Relationships post Second Feedback

1. **Occupancy:** `current_guest` and `room`
2. **affiliation:** `current_guest` and `iitgn_member`
3. **booking:** `current_guest` and `reservation`
4. **assignment:** `room` and `reservation`
5. **requires_maintainence:** `room` and `maintainence_request`
6. **manages_maintainence:** `hospitality_staff` and `maintaince_request`
7. **manages_reservation:** `hospitality_staff` and `reservation`
8. **assigned_to:** `maintaince_request` and `housekeeping_staff`
9. **incurrees_bill:** `guest` and `bill`
10. **generates_bill:** `hospitality_staff` and `bill`
11. **travel_Request:** `current_guest` and `travel_request`
12. **assigned_driver:** `travel_request` and `drivers`
13. **manage_travel_request:** `hospitality_staff` and `travel_Request`
14. **feedback_history:** `current_guest` and `feedback`

Validation with ER Diagram

1. Occupancy: `current_guest` and `room`

Constraint: The guest is always assigned a room, which may or may not be assigned to a particular guest.

Validity: This constraint is present and valid as it allows for the relationship between the current guest and the room.

2. Affiliation: `current_guest` and `iitgn_member`

Constraint: A current guest must be affiliated with the IITGN member.

Validity: This relationship is present and valid, adhering to the constraint.

3. Booking: current_guest and reservation

Constraint: A current guest must have a reservation under their name.

Validity: This relationship is present and valid as it allows for multiple reservations per guest.

4. Assignment: room and reservation

Constraint: A new room shall be assigned for every single reservation.

Validity: This relationship is present and valid, allowing for multiple reservations to be associated with a room.

5. Requires_maintenance: room and maintenance_request

Constraint: A room can require maintenance, and there can be multiple maintenance requests for different rooms.

Validity: This relationship is present and valid, adhering to the constraint.

6. Manages_maintenance: hospitality_staff and maintenance_request

Constraint: Hospitality staff can manage multiple maintenance requests.

Validity: This relationship is present and valid, allowing staff to manage multiple maintenance requests.

7. Manages_reservation: hospitality_staff and reservation

Constraint: Hospitality staff can manage multiple reservations.

Validity: This relationship is present and valid, adhering to the constraint.

8. Assigned_to: maintenance_request and housekeeping_staff

Constraint: Maintenance requests can be assigned to multiple housekeeping staff members.

Validity: This relationship is present and valid, allowing for multiple staff members to be assigned to maintenance requests.

9. Incurs_bill: guest and bill

Constraint: A guest can incur multiple bills.

Validity: This relationship is present and valid, allowing for multiple bills to be associated with a guest.

10. Generates_bill: hospitality_staff and bill

Constraint: Hospitality staff can generate multiple bills.

Validity: This relationship is present and valid, adhering to the constraint.

11. Travel_Request: current_guest and travel_request

Constraint: A current guest can have multiple travel requests.

Validity: This relationship is present and valid, allowing for multiple travel requests per guest.

12. Assigned_driver: travel_request and drivers

Constraint: A travel request must be assigned to a single driver.

Validity: This relationship is present and valid, allowing for drivers to be assigned to a travel request.

13. Manage_travel_request: hospitality_staff and travel_request

Constraint: Hospitality staff can manage multiple travel requests.

Validity: This relationship is present and valid, adhering to the constraint.

Feedback_history: current_guest and feedback

Constraint: A current guest can have multiple feedback entries.

Validity: This relationship is present and valid, allowing for multiple feedback entries per guest.

4. Contributions:

1. Gaurav Shah (Group Leader)

- Completed all the changes in the WebApp as mentioned in both feedbacks.
- Created the final report.

2. Soham Rahatal

- Added locks for some database tables for concurrent multi-user access
- Added the Google authentication for the admin and iitgn_member
- Collected feedback from stakeholders with Gaurav & Pratik
- Involved in the drafting of the final report.

3. Pratik Agrawal

- Conducted tests for SQL Injection, XSS, CSRF, & Path Traversal attacks
- Completed Validity of Relationships after feedback with ER diagram
- Collected feedback from stakeholders with Gaurav & Soham
- Involved in the drafting of the final report.

4. Rohit Srivastava

- NO CONTRIBUTION

5. Banavath Diraj Naik

- Q2 in Responsibility for G1

6. Sohitha Sonalika

- Q2 in Responsibility for G1

7. Shivamani

- Q2 in Responsibility for G1

Sub-groups:

G1: Pratik Agarwal, Rohit Srivastav, Banavath Diraj Naik, Sohitha Sonalika

G2: Gaurav Shah, Soham Rahatal, Shivamani

References:

1. <https://guesthouse.iitgn.ac.in/booking.php>
 2. https://guesthouse.iitgn.ac.in/accommodation_facility.html
-

The End

